THE

MEDICAL AND SURGICAL REPORTER.

No. 605.] PHILADELPHIA, OCT. 3, 1868. [VOL. XIX.—No. 14.

ORIGINAL DEPARTMENT.

Communications.

SPINAL SYMMETRY AND DEFORMITY.

BY E. P. BANNING, M. D.,

Of New York.

DIGNITY OF PHYSICAL UPRIGHTNESS.

It is apparent that throughout the animal kingdom the gift of physical erectness has been reserved to man alone; that, by and through it, man is installed in his recognized lordship over the beast of the field; and that in it, we may discern the boundary between the soul of the beast, which goeth downward, and that of man, which goeth upward. It is further apparent, that physical uprightness is both significative and comprehensive of moral uprightness also; is divine in its institution, humanizing in its working, and the insignia royal of the *Great King*, that *man is born* heir to heavenly immortality. And, so irrepressible was the perception of this significative nature of animal erectness, that Grecian philology baptized man ANTHROPOS, The being with the heavenward (upturned) face.

PHILOSOPHY OF THE ERECT POSTURE.

This we find to consist chiefly in an equipoising of the superior trunk over and upon the body's centre of gravity; which centre is located in two lumbar vertebræ. This latter is a controlling fact, and is rendered apparent by a glance at figures 1 and 2.

FIG. 1 (front), shows by vertical line *b, b*, and oblique lines *c c, c c*, that when the equal limbs tread evenly, the upward force of the earth, on the one hand, and the downward force of the superior trunk, on the other, must converge in the lumbar vertebra on perpendicular line *b b*, which is vertical to a point equidistant between the feet.

FIG. 2 (side), shows that when the body is perpendicular to itself, the gravity of the superior trunk balances (antero-posteriorly) over and upon two lumbar vertebræ—the lumbar curves acting as neutralizing equivalents reciprocally. If the latter were not so, perpendicular line *b b*, and oblique lines *K K*, *L L*, could not all of them intersect at the same point in the lumbar vertebræ—as they do by virtue of inexorable law.

Thus, then, it appears clear, that when this two pillared pile is perpendicular, it constitutes a complete microcosmic centripetal system in itself, with the lumbar spinal curve for its centre; and, that from and around the latter, all the antagonistic muscular forces and motions play, in activity, and return to it in repose, exemplifying the law, that all orderly systems work from centre to circumference, not from circumference to centre; and also, that when equipoised upon this centre, the body, in both its axes, is literally pressed into symmetry by and in the ratio of its own gravity, and must so remain until centripetality is broken by muscular or other disturbing force. It further appears, that when this lumbar curve is in this mathematical centre of the body, it is both the source and the arbiter of all the superior trunkal movements and bearings; and, that until it either advances or retreats, the superior trunk can make no considerable motion either way, without falling. That is, in bowing, the lumbar spine must first retreat behind its central bearing; or, in leaning back of that point, the latter must first advance. Hence it is, then, that if the thumb is firmly pressed upon the lumbar curve of an upright man (at the true axis), an attempt to bow, will bring the whole body's weight to bear against the thumb, so anxious is the centre to retreat to allow the superior trunk to advance; and if the effort to throw the chest forward is great, and the thumb holds firmly, the heels must rise, and the body fall (turn up at root). Hence, also, why, when the experiment is changed, and the thumb is held some two inches from the spinal centre, that centre will retreat and touch the thumb in bowing. The philosophical inference of this is, that all the graceful motions of the superior trunk are derived from, and dependent upon, preceding opposite movements of the lumbar spine, and never otherwise, and that the unsuspected source of both physical symmetry and deformity lies in this spinal centre, and that this is the point at which to first operate, both for the con-

Fig. 1.

Fig. 1. *b b* vertical line, traversing the entire medial line of the spinal column, and falling equi-distant between the feet. *c c*, *c c*, lines from the basal and upper corners of the trunk, and converging in the lumbar spine on *b b*, illustrating that to be the point where the upward force of the earth through each leg, and the downward force of the body, converge as upon a transverse centre of gravity, and so, literally press the body into transverse symmetry upon that point.

Fig. 2.

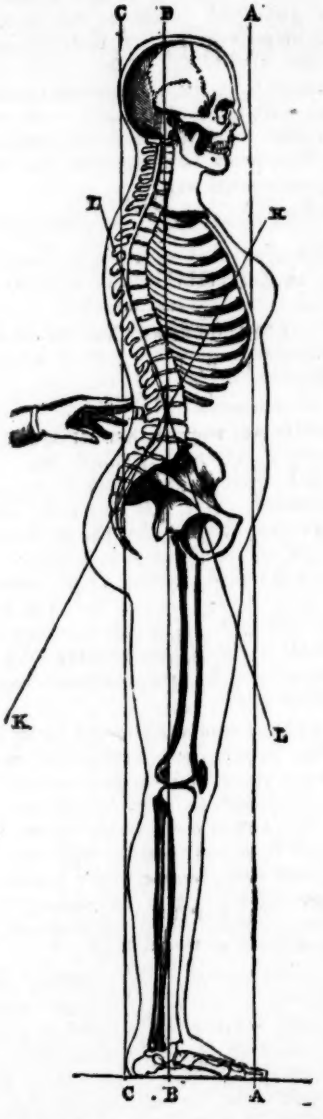


Fig. 2. *A A*, vertical line, showing tip of nose, pubes, and large toe, all to be in line when the body is erect. *C C*, line showing extreme occiput to be vertical to extreme heel, and that there should be a considerable space between it and the lumbar spine. *B B*, line passing through the cervical and lumbar medulla spinalis, and also the hip, knee, and ankle-joints, showing all these points also to be in line, and that the lumbar curve is the body's antero-posterior centre of gravity. *L L*, *K K*, oblique lines, traversing the advancing and retreating spinal planes, and intersecting on *B B*, in lumbar curve, thus giving mathematical proof that the lumbar spine at [illegible] is the body's antero-posterior centre of gravity and spinal axis.

tinuance of symmetry and the removal of deformity. This idea also explains the fixed fact that gross and cumbrous bodies are proverbially more erect and sure-footed than those which are slight and lean. That is, the spinal centre is, in them, so shoved in advance of a line vertical to the ankle, as to compel the superior trunk to be poised sufficiently behind that point, to antagonize the force of anterior abdominal weight.

PHILOSOPHY OF DEFORMITY.

Having seen that erectness is mainly the result of an equipiosing of the superior trunk upon the spinal centre, which is vertically suported on two equal bases, we are prepared, by a glance at Figures 3, 4, and 5, to comprehend the rationale of spinal obliquity.

Fig. 3 represents Fig 2 with its dorsal muscles relaxed, and its lumbar spinal curve consequently retreated behind its vertical point *B B*, leaving the chest to *appear* to have advanced. But that this is an illusion, is evident from the fact that the mathematical diagram (which is identical with that in 1 and 2) shows the head and feet to be intact, and that only the *middle* of the body (or lumbar axis) has changed. Thus, then, we are forced to say that the legitimate working of gravity alone has caused the droop, because the spinal point has receded.

Fig. 4 shows substantially the same facts as does Fig. 3, only that in the first case the defect was a *curve*, and was general, and Fig. 4 shows the defect to be an *angle*, and to be local. But, bowed down as the figure is, the lines show that the chest is still vertical to the foot, and that the angle only has receded, and that weight alone is increasing the derangement, in which decided pathological conditions are liable to be involved.

Fig. 5 represents a body resting mainly upon the right foot, and the upper trunk, in consequence, leaning to the right, to preserve its equipose over the supporting base. This compels gravity, in lieu of traversing the entire perpendicular medulla, as in Fig. 1, to break across it at its lumbar and dorsal portions, and to act upon the frame much as it would to sit upon a chair's edge when poised only upon two of its feet; *i. e.*, the earth crowds the right hip bone upward and inward, and throws the left one correspondingly downward and outward. Next, the vertical action of gravity upon the trunk, in turn must crowd the dorsal spine and right shoulder to the right and upward, thereby practically "saddle-bagging" the trunk across the spinal axis, and so both incepting and consummating a progressive double deformity; and that, too, without antecedent disease usually, it being the legitimate working of the law of gravity upon an unequal and one-sided base. In other words, the gravity which, in Fig. 1, of necessity pressed the body into symmetry from two equal bases and a vertical centre, is now, from one only base and a lost centre, equally compelled to press the body out of symmetry; the fault, meantime, not being found at the

Fig. 3.

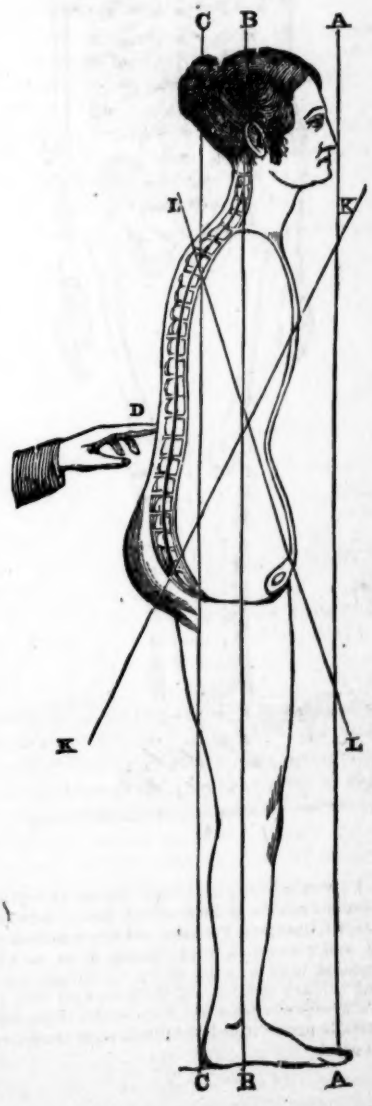


Fig. 3. Illustrating a form drooping from habit or weakness; and that the cause is, a receded spinal axis, and not displaced shoulders.

points of deformity. It should also be noted, that the lumbar curve in this case is the *primary*, and the dorsal the compensative curve, inasmuch as that portion of the spine is the *base*, and receives the first shock from tangent pressure, with the leverage of a long and swaying trunk bearing upon it from above. Again: not only does this state of things sway the *osseous* frame from its centre, but it also breaks up the antagonism of the trunkal muscles in such a way, that the stronger their general action, under such circumstances, the greater will be their deforming influence. Thus, then, by the vertical action of gravity upon an *unequal* base, we have the initiation, and by consequent unbalanced muscular action, the *consummation* of a lateral spinal deformity. Besides these, there are other varie-

Fig. 4.

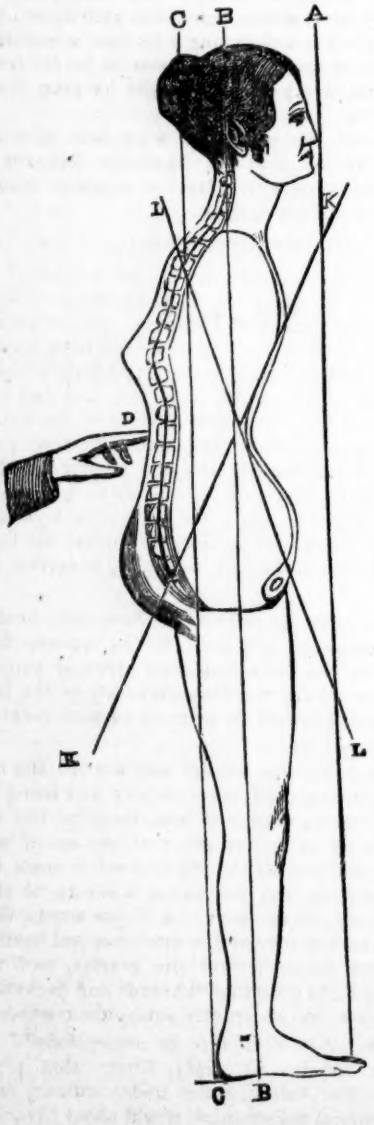


Fig. 4. Illustrating the same as Fig. 3, only with an acute angle, and not a mere general curve.

Fig. 5.

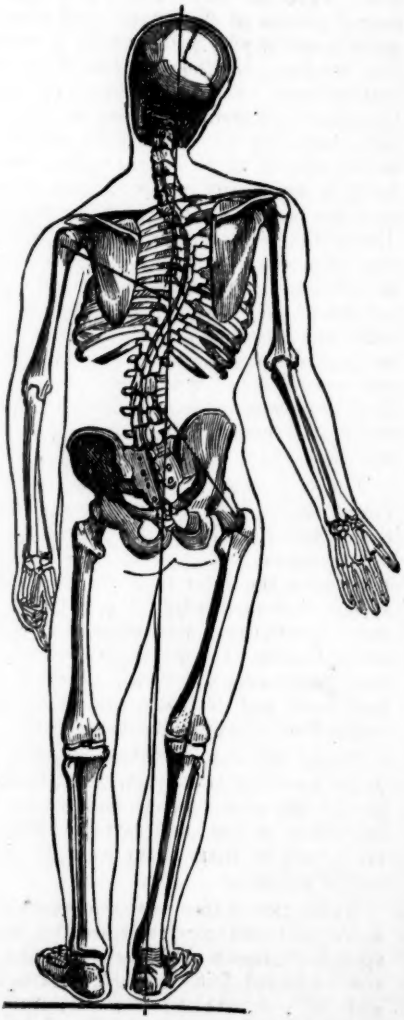


Fig. 5 represents the body supported mainly on right foot. *A. A.* Perpendicular line, from centre of head to right heel; showing the head to be still vertical to the basal point. *B. B.* Angular line indicating the direction of gravity against the lumbar spine, and shoving it to one side. *C.* Line showing the weight of the head and left shoulder to be in the interest of a dorsal curve to the right.

ties of curvature, such as the lateral-single and the anterior, but the details of their philosophy and therapeutics are all comprehended in the above fundamental principles.

PATHOLOGICAL CONSIDERATIONS.

When the body is erect, there is no undue pressure upon any one point of the osseous, cartilaginous, or medullary tissues of the spinal column, nor is there any exhaustive tension of the spinous ligaments or dorsal muscles. Then the body's weight bears upon the central portion of the column, and when temporarily out of plumb, the weight is translated (for the time) to other portions of the vertebral surfaces. In the first case, the spinous ligaments and dorsal muscles are at perfect rest, and only in the exercise of the tonic contraction of their texture. But when the body is transiently *out* of its axes, those tissues are also (for the time) on the strain Under the ordinary order of life, these varieties of position, relation, and condition, are so diversified as to rather conserve the normal condition and use of these tissues But, when to be drooped or curved is the *rule*, not so; and although some organic states will resist nearly all evil tendencies, such a state is liable to result in serious changes especially under a strumous diathesis and a state of general cachexia.

Touching these changes, for the professional reader, it is sufficient to say, 1st, that the tendency of the greatly increased amount of permanent compression thus brought to bear upon the inter-vertebral cartilages and spongy bones, is adapted and liable to increased irritation, tenderness, inflammation, and softening of those tissues, which, if too long continued, will result in absorption of both bone and cartilage, and, of course, correspondingly increase the spinal angle.

Next; this state of things is liable to impinge upon the spinal marrow and the roots of the branching nerves, and induce a concatenation of local and radiated effects, especially such as relate to the cerebral and locomotive functions.

Next; that under such circumstances the consequent and continued traction upon the spinous ligaments and dorsal muscles, is directly adapted, first to weary, next to irritate, and lastly to exhaust those tissues; not so much on account of the increased burden, as of its unmitigated continuousness. This, in connection with the aforesaid changes going on in the cartilages and spongy bones, not only induces weariness and diminished physical force, but also those varied sensations which the patient so quaintly expresses, such as "giddiness," confusion of ideas, "loss of memory," heat in the head and back, "a constant tired feeling," an "aching," "grinding," "gnawing," "wrangling and raving distracted feeling."

The incipient stages of these symptoms are usually called "nervous or rheumatic," and are either neglected or unsuccessfully treated with plasters, anodynes, and tonics, while it never occurs to the physician to ascertain, 1st, whether there is any curvature or tenderness of the spine, and, 2d, if the body is permanently out of plumb, and consequently, the spinal muscles, ligaments, cartilages, and spongy bones undergoing a torture, something like the wearing of tight boots on tender feet, and that of a perpetual weight hanging from the arms.

Indeed, the profession must bear with us while we say, that this miserable diagnosis is the rock upon which the last hopes of thousands have been dashed.

THERAPEUTIC INDICATIONS.

In this department, also, we are forced to take a purely physical view, by virtue of what has gone before, and remark fundamentally, that as most of the varieties have been mainly developed by and through the body's being unequally supported upon one foot and one hip, and the consequent gliding of the spinal axis to one side of its primary vertical position, it follows that the first curative indication is, to *reverse the force of the body's gravity to the opposite side of the spine at each point of* CURVATURE; for by that, we compel the force which maintains the difficulty, to correct the same.

In order to do this, we have only to shift the weight of the body to the opposite foot, and at the same time, to vigorously support and crowd the receding convexity of the lumbar spine toward its primary vertical point, as in Figs. 1 and 2.

In doing this we not only change the base and reverse the force of gravity, and bring the body into a degree of centripetality, but also break up an undue action of one set of muscles, and compel the opposite set to come into requisition, and commence a return to their primary antagonism. In a few words, then, we thereby reverse the mathematical bearings of the *frame* toward the gravity, and thus compel the muscular "shrouds and backstays" to come into an orderly antagonistic action.

But how shall this be accomplished? To this inquiry we reply, First: that proper muscular habits, either under ordinary labors or special calisthenics, would about invariably prevent these obliquities (all things equal),

but that when they have fairly gotten under way, seldom or never could they alone rectify such cases; and that in connection with electric, gymnastic, and constitutional treatment, they positively demand co-operative physical force.

Next, that such mechanical force should embody a fulcrum and lever counterpart of the curvature, inasmuch as it is by a fulcrum and lever action over an unequal base, that gravity has worked the mischief.

And lastly, that in proportion as instrumentalities lack the above counter principles, on which the curve is incepted and perpetuated, and act simply on the principle of circular pressure, or by direct abstract force, they cannot correct a lost axis, or give any support in which a progressive cure, by muscular eduction, inheres; such appliances would exert only a dead circular or screw force, which is not aggressive, and which is likely to rest for its fulcrum upon other weak parts which need support themselves. Such contrivances can only come about as near to bracing and levelling the body in the interests of muscular eduction and centripetality, as one's pulling powerfully upon his own waistband would, toward elevating him heavenward. Keeping these fundamental principles in mind, we will now consider a case of

Simple Drooping,

which may be the result of habit, or of muscular weakness; it may also be simple, or complicated with spinal tenderness and irritation. If it is a case resulting from habit merely, with no disease, and the form is slight (especially if the subject be a child), the body-balance (see Fig. 6) may be all that is requisite for crowding the antero-posterior spinal axis to its vertical point, and so compelling gravity to support and not to crush the form. Again: if this light and cool instrument were worn during school hours by boys and girls of slender make, it would avert a vast amount of deformity and ungracefulness, and prove a national blessing in the shape of a well-formed people; for, in the plastic and susceptible tissues of childhood, it is literally true, that "Train up a child in the way he should go, and when he is old he will not depart from it." Again: that "Just as the twig is bent the tree is inclined." If any one doubts the wisdom of this suggestion, he has only to note the fact, that school girls about invariably assume the "Grecian bend;" and if he takes notice of the cramping seat and desk arrangements between which children are packed, he will wonder how any diligent student can fail to retract the epigastrium, round the shoulders, compress the chest, and so become heir to many inconvenient and fatal troubles.

Fig. 6.

Fig. 6. The Body-Balance, for balancing the body upon its centre of gravity, when the subject is young the form is slight, and no abnormal support is required.

A A, spring encircling the pelvis; *b b*, convex pads, covering the inguinal opening, serving as points of resistance, giving some abdominal support, and protecting against inguinal hernia.

C C, shoulder-bow, with caps, which press upon the anterior convexity of the heads of the humeri. Its action is to press in the inner edges of the scapula, roll out the shoulders, and so flatten the latter and expand the chest.

D D, spinal lever and dorsal pads, which, when joined to the shoulder-bow and hip-spring, so push forward the lumbar curve, as to balance and symmetrize the body. A physiological and airy substitute for the corset, especially adapted to school boys and girls.

Another effect of action upon this suggestion would be the banishment of the heating and compressing corset, which gives all of its support and improvement of form (?) either by compressing the waist and depressing the viscera, or by furnishing something to lean upon. Whilst the balance, on the other

hand, sits *behind*, pushing forward the small of the back, poising the body upon its centre, levelling and sloping the shoulders, and expanding the chest in the interest of respiration and digestion. One lets the body upon it, whilst the other balances the body upon itself. On this point we cannot close without reminding the profession that to effect a *revolution* which would be replete in good taste and humane results, they have only to exercise a legitimate interest with families where their opinions are at once "law and gospel." And should any of them demur to this, on the score that the balance is an "artificial" support, we would say in turn, Is not the inevitable corset an artificial support also,

Fig. 7.

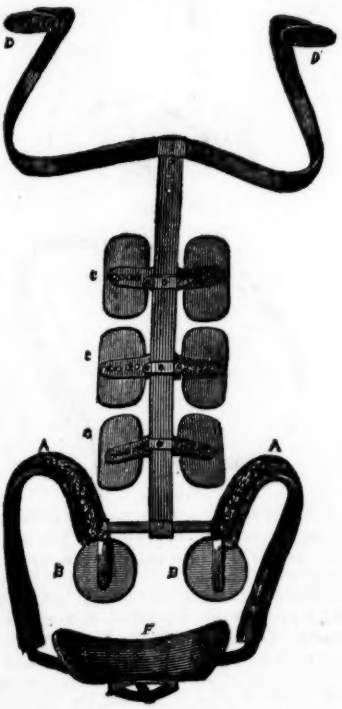


Fig. 7. Abdominal and Spinal Shoulder-Brace.—*A A*, arches of the mainspring passing above each hip-bone, avoiding all pressure on the bones, nerves, or blood-vessels, and furnishing the power of the instrument. *B B*, pads supporting glutei muscles on either side. *C C*, aggressive supporting saddles, to either side of the dorso-lumbar spine (in ordinary cases only the lower saddle to be used), holding that portion of the spine properly forward. *D D*, spring support, resting anteriorly upon the heads of the humeri. *F*, front pad, elevating abdominal viscera.

The combined action of all is, to elevate the lineal viscera, sustain the lumbar spine in its vertical position, and poise the superior trunk behind the spinal axis.

and contraband of physical law, whilst the balance acts in the interests of such law? "Take us the foxes, the little foxes, that spoil the vines, for our vines have tender grapes."

But as a rule, this airy brace is too slight, except in cases of children, and the abdominal and spine shoulder brace (Fig. 7), in some one of its forms, is required. Ordinarily, but one dorsal saddle should be used in this instrument, and that should be applied to the

Fig. 8.

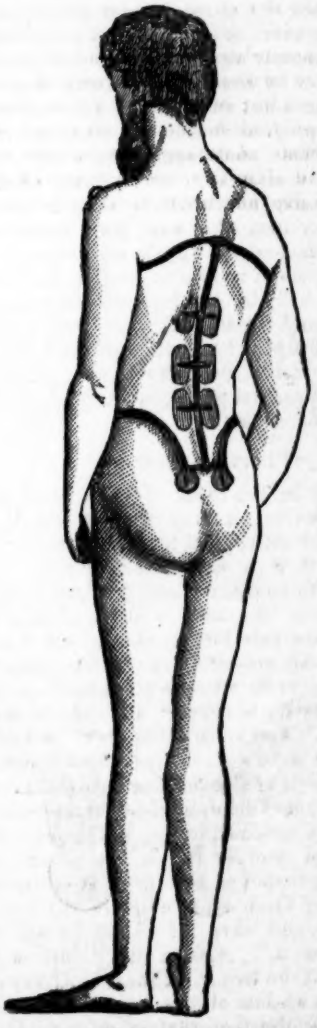


Fig. 8. represents the abdominal and spinal shoulder-brace, correcting drooping by conjointly springing forward the dorso-lumbar spine, drawing back the superior trunk and elevating the abdominal viscera, and consequently expanding the thorax and hypochondria. In the mean time perfect visceral and muscular freedom are preserved.

lumbar spine, but, if actual weakness in addition to habit is present, or if there is much tenderness, then for more complete spinal support, one, two, or even three saddles as will answer should be used. When applied (in Fig. 8) this instrument reposes the body upon its spinal centre, and thus removes stress from the dorsal muscles and spinal ligament, on the one hand and takes compression from the intro-vertebralis and spongy bones on the other; and the restorative powers are re-enfranchised. But, with much

Tenderness and Irritation,

though properly poised, a portion of the body's weight requires to be actually lifted from the tender points; otherwise, through continual compression, all hope of a cure may be cut off by ultimate softening, caries, abscess, and curvature. In fact, neglect just here has resulted in the culmination of thousands of hopeless spinal affections, which attention to this injunction might have averted.

In meeting this additional indication, the spinal prop (Fig. 9) has ever proved efficient; and Fig. 10 represents its practical workings upon the body.

It differs from other instruments in use for the same purpose—

1*st*. In having a firm and immovable *point above* and inside the innominati. Conse-

Fig. 9.

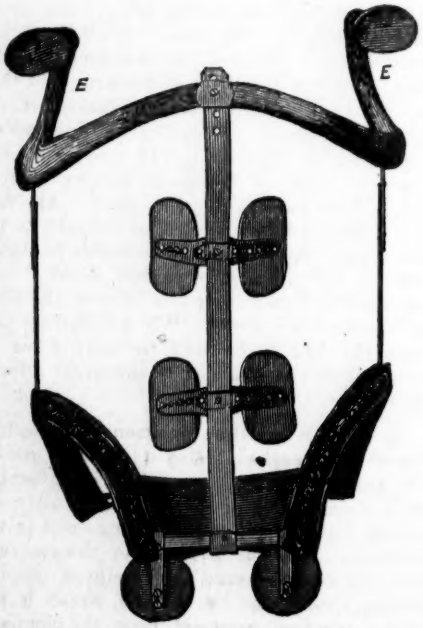


Fig. 9. The Spinal Prop consists of Fig. 7 with the addition of *f f*, which are extensible side-posts resting upon the arches of Fig. 7, and converting the shoulder-bow, *E E*, into unyielding crutches.

By this addition, not only are the viscera elevated, the shoulders drawn back, and the proper forward spring of the lumbar spine preserved, but a tender, irritable, or carious spine is vastly relieved of pressure. The subject is allowed to exercise freely, and threatened disorganization and curvature are averted.

Fig. 10.

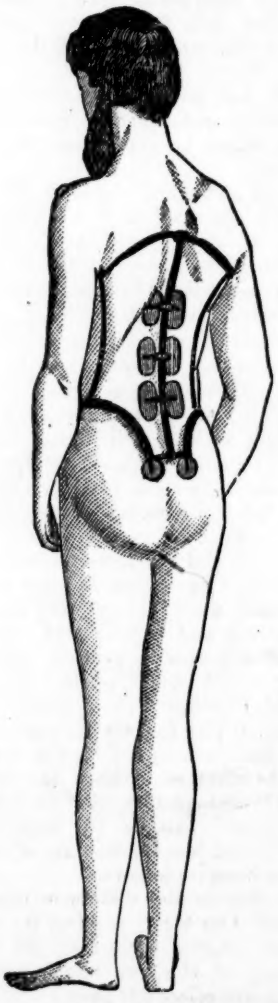


Fig. 10 shows Fig. 9 not only supporting the spine, but relieving spinal irritation, by taking the weight of the body from tender spinal points, and protecting the latter in the case of jolting and twisting the body. This it accomplishes by the crutch action under the axilla, which compels the innominati to carry the superincumbent weight, and receive the shocks.

quently, it does not recede under the body's pressure; compresses no muscle or circulating vessel; and its periphera being so near the body's transverse centre, it does not "shirk" on shifting the body from one foot to the other.

2*d*. Its whole action is from behind, no part of it touching the sternum or ribs, at any point, in the largest respirations or freest motions. Its effect is to elevate and shove the thorax and spine forward by a purely fulcrum and lever action, touching only at convex and distal points, leaving intermediate and receded parts free to move and expand under the concentric action of the combination.

3*d*. It has no straps, buckles, or upholstery, and is consequently light, airy, and cool, and makes no appearance through the dress; and,

4*th*. Its abdominal action is of such an undulating character at the lower hypogastrium, as to elevate the lineal viscera and compel them to brace out and expand the body, just as the body braces out and expands its garments (a desideratum).

When this prop is rightly adjusted, it so diminishes actual weight upon the diseased vertebra, and braces them from within by the viscera, and from without by itself, that in many cases of spinal irritation and caries, which have lain for years under blisters, issues, caustic, and the moxa, a marked progressive improvement has commenced on its first application.

The usual and unsuccessful treatment of this condition by scoring, hewing, and burning, is based upon the *orthodox* fallacy, that the inception and development of the difficulty depends upon a primary local morbid action, and that this must be "*translated to the surface*" before a cure can be effected. Whereas, our plan regards the tenderness (and the disorganization as well) not as the disease, but as the effect of violence done to the tissues; and consequently, that to remove the hurtful pressure, and at the same time preserve to the subject the free use of himself, is the rational course to pursue.

What, then, is the difference between the two plans? One treats an effect for the cause, the other removes the cause. Of the manifold verity of this, we might recite many cases, but will select but two:

Miss P., Chicago, aged 22, gradually brought herself to the following condition by over-exertion as a teacher. She at first felt merely weakness at the epigastrium and lumbar region; gradually the spine became intensely painful, often inducing convulsions, and ultimately she was so prostrated that turning in bed caused the greatest agony. In this state she was brought to our office, and fainted from the exhaustion of sheer agony, caused by her temporary vertical position. During her half-conscious state we managed to adjust the prop; on reviving, she said, "I feel better." She was next helped to sit upon the side of the bed, and remarked, "I sit without agony." A few moments after, she walked alone, and, whilst standing, related her former sufferings to a patient similarly afflicted. Some months after this, she informed us by letter, that she had been able to return to her old vocation, and walked several blocks daily. Previous to our seeing this case, the ingenuity of several physicians had been exhausted in contriving scientific tortures, by which to remove the disorganizing effect of pressure upon susceptible spinal points.

Maggie W——, Ky., aged eight years, had for four years been under the constant endurance of the moxa and caustic, for extreme tenderness and pain in the lower dorsal spine, with considerable curvature, which latter gradually developed. On being consulted, we expressed the belief that the inflammation and pain were only the effect of pressure, and that on removing a portion of the trunkal weight from the diseased points, the sufferings would commence to diminish; and also, that her present course of treatment was exhausting her without rational hope of good. At this, the doctor ordered her to be brought to us. We found the patient totally unable to stand, and at the sight of "another doctor," she screamed and endeavored to hide in the folds of her mother's dress. While adjusting the prop, she had to be held by main force, so determined was she not to encounter a fresh doctor.

Result.—When the adjustment was effected, the child remarked, "Buy it; it feels good." On the same day she played considerably with a companion, and in four days after, returned home (forty miles) sitting erect in the carriage. But our anxiety for the case was not fully removed until the receipt of the following letter from Dr. Young, which is not only a practical comment upon the comparative merits of the two plans, but also does as much credit to the heart as to the head of the writer:

Elizabethtown, Ky., March 9, 1856.

Dr. E. P. Banning:

Dear Sir.—Our little patient, Maggie Wintersmith, with curvature of the spine, whom I treated with counter-irritants, the recumbent position, etc., (a treatment which amounted to cruelty,) with but slight, if any benefit, has been almost

entirely relieved within the last four weeks, by the application of your spinal prop. These appliances have acted like a charm in removing physical and mental suffering. She is free from pain, and is as cheerful as a morning lark. The success of your novel treatment in spinal distortion and disease, should entitle you to be considered a benefactor of your profession and race.

Respectfully and truly your friend,

B. R. Young, M. D.

ANGULAR CURVATURE.

Of this, Fig. 4 is a moderate representative. It may consist merely of a curve from pure debility and cachexia, or may involve all grades of disease, from simple irritation and tenderness to caries and abscess.

With respect to the causes of these deformities, we only say, that whilst a strumous diathesis may *predispose* to them (and often does), abundant experience has shown that, in a vast proportion of the cases, their *development* is traceable to some protracted or sudden violence done to the spine—such as excessive effort at play, lifting, or kicks and falls. Especially is the latter frequently true in the case of infants left in the care of faithless nurses.

Accordingly, there will be two indications of treatment, viz. — constitutional and mechanical. If there be *evidence* of constitutional vitiation, let it be attended to at once. On this head, we only remark generally, that ferruginated and iodinized tonics, with the best of living and a perfect system of hygiene, constitute our plan.

The second indication is to relieve the spine of a part of the burden which is bearing down with such unmerciful leverage upon the weak points, and to protect the tender points from the aggravating influence of friction and impingement, under jolts and twisting motions.

If there is abscess or caries, we must not at first attempt much by the straightening process, but be content to so remove the irritation of pressure as to favor a firm anchylosis. But if no caries exist, we may not only protect the tender points from pressure, but actually enter upon such extending support as is adapted to be indefinitely aggressive upon the curve. For the accomplishment of this, we have in Fig. 9 (the Spinal Prop) all that is requisite where the angle is slight and not so prominent as to impinge against the spinal lever which holds the supporting saddle against it. (See Fig. 10, showing its practical working.)

But where the angle is too prominent for that form of prop, then the Revolving Spinal Prop, Fig. 11 (represented intact in Fig. 12) meets the difficulty.

This instrument, by its hollow square, makes impingement against the spine unnecessary, and its dorsal plates, by revolving and running up and down on their supporting screw rods, not only reach the desired locality, but also secure, in every position, an even and uniform fit to every plane of the curve.

When either of these instruments are even loosely applied, their beneficial results are often surprising and immediate. Not unfrequently, paralytic limbs begin to move, and ultimately to carry the body. Their usual working, however, has been—first to give comfort, and next, to enable those who have been unable to sit, to immediately do so, and soon to walk. Of course, these results are produced by the simultaneous elevation of the viscera, support of the spinal curve, and drawing back of the shoulders; and next, by removing pressure from the vertebral bodies, and stress from the spinous ligaments and dorsal muscles.

The results of this treatment have usually

Fig. 11.

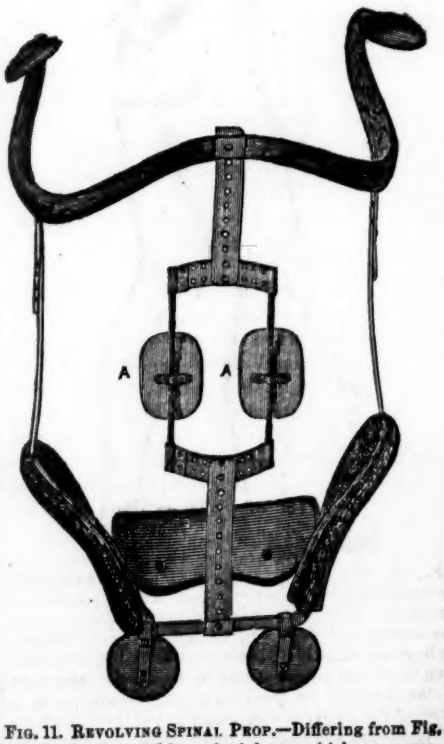


Fig. 11. Revolving Spinal Prop.—Differing from Fig. 8 only in the form of its spinal lever, which accommodates the angle. *A. A.* Plates which revolve on screw posts, so as to fit the planes of the curve on either side, and secure an equal flat support. These plates are curved to the form, and may be run up and down on the screw-posts, to suit the height of the curve; they are a positive protection against bruising or irritating the prominent parts.

been as follows: First, if the patient were a child of fair constitutional powers, and taken in time, a radical cure has been effected. But if the subject were an adult, and actual caries established, an anchylosis has been effected, but the curvature not wholly removed.

Fig. 12.

Fig. 12. The Revolving Spinal Prop. Immediately strengthening the whole person, and arresting caries and curvature. First, by upward support, which converts the abdominal viscera into an internal brace. Second, by its crutch-like action, which holds the body's weight from the spinal curve. Third, by a strong drawing back of the shoulders by the caps on the shoulder-bow in front of the heads of the humeri. And Fourth, by the strong bracing and pushing forward action of the revolving dorsal plates on the vertical screw rods upon the curvature. By a revolving action, these plates are self-adjustable to any slope of the spinal angle at either side, with no necessity for any impingement upon the spinous protuberance. As the case improves, the vertical support may be successfully increased by means of slides and screws in the side-posts.

Case 1. Mrs. Springstead, of Rochester, was for one year the subject of a posterior curvature, which not only enfeebled her legs, but also instituted every conceivable nervous derangement on the whole system. Opium had no power to quiet the spasms or to produce sleep, and during the six months previous to our taking charge of her, she had not been able to move so much as one toe, and much less either limb. From the commencement, the case was plied with an abundance of strychnia and counter-irritants, until pronounced to be softening of the brain and spinal marrow.

In this condition, as a last resort we applied the spinal prop, in the bare hope that the paralysis was the result of the pressure upon the roots of the motor nerves.

Result. Same evening, patient looked and said she felt better; following day, motion was restored to one toe. In a week more, she stood up by holding on to something. In two months, she walked considerably, and in the third month, she attended to her household affairs. No other remedy was applied.

Case 2. Miss T., Galesburg, Illinois, had been mainly recumbent for one year, any attempt at standing or sitting producing alarming cerebral symptoms, with great prostration, pain in spine, and a tremulous condition of the entire body. During this time, she had not been neglected by the best medical aid in the country. On examination, there was perceptible but the slightest protuberance and tenderness at one or two of the lower dorsal vertebræ. For this patient we applied the prop, and ordered nothing else to be done.

Result. She immediately spoke of a "strange feeling of composure—as if some over-hanging trouble had passed." Before night, was dressed and sat up; and at tea time, to alarm the family, she walked out to tea; returned very tired, but "slept, and awoke refreshed." On the following day, walked in the yard, and soon after rode out. At the termination of three months, we met her over one thousand miles from home, comparatively well.

And now, as these two cases fairly represent several hundreds, upon all of which caustics, issues, and confinement to bed had been but too persistently tried, what room is there for comment as to the comparative merits of the two methods?

LATERAL CURVATURE.

This affection may be single or double, and is specially common to females. Fortunately, it is seldom complicated with either caries or spinal irritation. It is usually the result of an early habit of standing on one foot, and sitting upon the hip of the same side. Such a habit, where the person is tall and slight, can scarcely fail to result in these irregularities. Another common cause is, attempting to rise with the body unsupported, after a long and protracted illness. In such a case, the muscular "shrouds and back-stays" are inadequate to "trim mast," and the body "saddle-bags" across the spine, as in Figs. 5 and 14, pages 264 and 272. In such a case, if the subject but for one moment stands upon the left foot, and balances over it, there com-

Fig. 13..

Fig. 13. The Centripetal Spinal Lever, for Double Spinal Curvature. *A*, *A*, the pelvic portion of the abdominal and spinal shoulder-brace, supporting the abdomen, and acting as a firm point from which the superior portions of the instrument can operate. *G*, the side-post which supports the shoulder-bow, and furnishes the lateral power for correcting the obliquity; the sharp-set in side-post, *G*, close by pelvic portion, furnishes the correcting force of *H*, *H*; the power being always in the ratio of that set, and is to be increased or diminished to suit the requisitions. *H*, *H*, shoulder-bow supported by side-post. *G*. Its left branch elevates the depressed left shoulder, and draws the weight of the scapula from the receding spine under it.

The right branch of the bow passes around the right shoulder, and presses and draws it to the left, by virtue of side-post, *G*.

I, hinge-joint, by which the bearings of the right and left branches of the bow can be changed to suit the planes of the irregular surfaces. *K*, lever supporting the dorsal saddle; the action of this is, to support the lumbar curve and push it forward, and is so twisted as to press only on that convexity and crowd it to the right.

The general action is, to reverse the body's weight to the left foot, and so to deprive gravity of its depressing force.

Fig. 14.

Fig. 14. Centripetal Spinal Lever, accomplishing nothing, its lever powers not being brought into activity, by being brought around the shoulders. (See explanation of Fig. 13.)

mences an improvement, indicating that we have only to reverse the force of gravity at each point of the curvature, to compel the body's own weight to press it toward its axial line, and to level its basal and upper corners. This indication is filled by the

CENTRIPETAL SPINAL LEVER,

it being a spring power, and the exact converse of the curvature at each point.

FIG. 15.

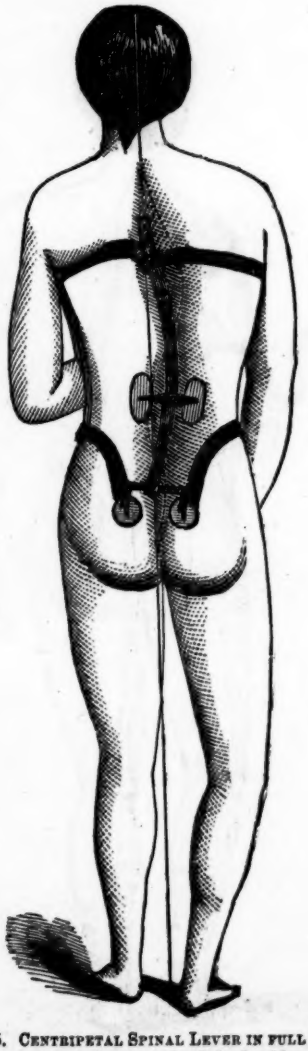


FIG. 15. CENTRIPETAL SPINAL LEVER IN FULL ACTIVITY, elevating and drawing out the left shoulder; drawing in the right shoulder; supporting the lumbar curve to the right, and aggressively restoring the body to its axis, and so crushing out the curvature by means of the very gravity which caused it. (See explanation, Fig. 13.)

When its pelvic portion only is fastened, its upper portion leans away from the superior trunk, (see Figs. 13 and 14); but when its upper portion is forced around the shoulders, the result is, that the right elevated innominatum is crowded downward, the left depressed shoulder raised, the lumbar curve crowded to the right, and the superior dorsal curve to the left. Its whole action is a fulcrum and lever one, and at cross purposes with the deformity, at its every point.

Whilst all this is going on, the instrument passes all depressions and concavities untouched, and so serves to improve the symmetry at such points by filling them out and supporting the garments.

But the crowning excellence furnished by this lever is, that after it has passed all concavities untouched, and pressed upon all convexities with a proper force, and in the right direction, its action is persistently aggressive at every salient point; and, that through its cross purposes on the curve, it provokes the patient to lean in the direction of the brace for respite from its perpetual stress. This not only reverses the force of weight at each point of curvature, but shifts the weight to the left foot, and brings the opposite and hitherto useless set of muscles into activity. In all this, then we do nothing which we ought not to do, nor leave undone that which we ought to do, and so restore the normal relations between gravity and muscularity, as to institute a new order of things in the interest of that plan which was divinely ordained. (See Fig. 15, showing the lever in full activity)

Of successful cases we might cite several hundred, but select two, which are just representatives of the whole:

Case 1.—Miss W., New York, aged 15, after a prostrating attack of typhoid fever, from which she recovered slowly, found her gait becoming unequal and vascillating, and soon noticed the right shoulder quite elevated and seemingly enlarged, and the left hip correspondingly prominent. On being sent to me by her physician, there was a very considerable double lateral curvature of the spine. Dropping a plumb line from the head, it fell upon the right heel, and showed a long and

obtuse dorsal curve to the right, and a shorter and sharper lumbar curve to the left. Consequently, she habitually rested the body chiefly upon the right foot in standing, and on the hip of same side in sitting. On manipulating the body, and shifting its weight to the (left) foot, the curves sensibly diminished. To this patient the centripetal spinal lever was applied, which caused the body to rest more upon the left foot. The improvement was immediate. 1st. The inequalities were about concealed. 2d. The dull aching in spine and shoulder was relieved, and the spirits and general health soon became greatly improved. As the young lady could bear it, the lateral action of the lever was increased, and within the space of five months, the form and strength became so entirely changed as to render the lever no longer necessary, and she is now an elegant and graceful young lady.

Case 2. ————, aged 13, was sent to me by her physician, with a very decided double lateral curvature. She had developed rapidly, and menstruated at between the ages of 10 and 11. She complained of lassitude, and labored under constant melancholy. Her appetite was very defective, and a steady decline was manifest. As this was a clear case of muscular prostration and deformity, through the one-sided action of the body's gravity, and as every tonic and alterative treatment had already been pertinaciously tried, I applied only the centripetal lever, according to the above plan, and gradually increased its vertical and lateral power.

Result.—The improvement in every respect was remarkable. By the expiration of the fifth month of this treatment, her appetite, spirits, and general health were completely renovated; her weight sensibly increased, and, at the expiration of the sixth month, scarcely was any curvature perceptible.

The rationale of this result is simply this: 1st. The support of the abdominal viscera upward, according to order, stimulated the prima-via to their normal activities, with all the benefits of so vital a function. 2d. The combined lateral and vertical action of the whole instrument so equipoised the body as to remove undue pressure and stress upon the osseous, cartilaginous, ligamentous, and muscular tissues on one side, and so restored the proper amount of pressure and stress upon the opposite side, as by rest on the one hand, and excitation on the other, to evoke a due equilibrium with corresponding energy.

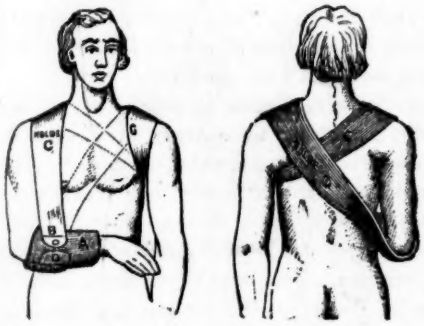
Conclusion of the Series.

APPARATUS FOR THE TREATMENT OF FRACTURE OF THE CLAVICLE.

By J. M. Boisnot, M. D.,
Of Philadelphia.

The following article appeared in the Medical and Surgical Reporter of July 4th, 1868, but an error occurred by which the front view of the apparatus as applied was omitted, and the same view of the apparatus devised by Dr. Levis substituted. Apology is hereby offered to the readers of this journal for the circumstance which has made this repetition necessary, and to my friend, Dr. R. J. Levis, for my having improperly represented the apparatus so long and favorably known as his.

In adding one more to the already large number of apparatuses for the treatment of fractures of the clavicle, my desire has been *to simplify, render the patient comfortable, and endeavor to meet the requirements for producing favorable results.*



The conical shape of the forearm, with the apex at its most dependent part, admirably adapts it for an attachment from which traction can be made in an upward and backward direction. A leather socket fitting and laced around the forearm is the simplest application which can be made for this purpose, while its corresponding shape is a support; the latter feature can be more fully developed by having a portion continued beneath the ulnar border of the hand. The long band of webbing attached to this leather socket or case, upon its front part and near the elbow, being carried upward to, and over the injured shoulder at the point of fracture, elevates the shoulder, and prevents displace-

ment of the fractured ends of the clavicle when once coaptated; having at its initial end a buckle with swivel attachment, the arm may be placed in any suitable position, and the forearm carried across the breast in any direction called for by the peculiarity of the fracture. No pad in the axilla is required. A strip of adhesive plaster should, and graduated compresses may, be applied over the seat of fracture; the latter near to or distant from the shoulder as may best tend toward keeping the band in its correct position; this, as well as the distance which the arm should be carried from, towards, or across the chest, every surgeon will determine for himself. The course of this band from the injured shoulder, is across the back to the opposite axilla, then by a turn around this shoulder and again across the back to the second buckle at the elbow; the terminal end is then carried forward and beneath the forearm, to the turn around the shoulder (not shown in the cut); after forming a loop by passing through this turn, it can be pinned or sewed; a sling is thus formed and the apparatus and parts contained kept comfortably firm.

As it is applicable to either side of the body, it is merely necessary in sending for it, to state the age and sex of the patient.* The simplicity of this apparatus is evident, when compared with that of Dessault, or its modification by Fox; requiring for its impromptu preparation, only a coat sleeve and a strip of muslin shaped to the forearm and fastened together by needle and thread, I think it can be made anywhere, and by any one undertaking the treatment of a case of fractured clavicle.

A further use of this apparatus consists in its application to cases after resection of the shoulder, and as a support after reduction of its dislocations. The small amount of dressing constituting the apparatus, and the manner in which it supports and retains the parts in the position natural to them when uninjured, contribute alike to the comfort of the patient and the attainment of favorable results.

1308 *N. Sixth St., Philadelphia.*

* Mr. D. W. Kolbe, 15 S. Ninth St., Philadelphia, and Messrs. Tieman & Co., New York, are prepared to furnish the above apparatus.

Hospital Reports.

Jefferson Medical College,
Philad., June 3d, 1868.

Surgical Clinic of S. W. Gross, M. D

Reported by Dr. Napheys.

Lithotomy, Performed May 13th and 26th.

Henry M., æt. 8. This boy was operated on for stone in the bladder three weeks ago to-day, by Professor Gross, when a phosphatic calculus weighing upward of two drachms, was removed. (*Vide No.* for June 15th, page 509.) At the expiration of twenty hours, the urine began to pass by the urethra, and continued to flow by this channel for about the same time, when it passed entirely by the wound. At the expiration of a week, the granulating process had sufficiently advanced to permit the urine to resume the natural channel. The boy has not had a solitary bad symptom. With the exception of a dose of oil, administered on the fourth day, he has taken no drugs whatever. At the present date, the wound has closed throughout its entire extent.

Wm. H., æt. 10 years. Dr. S. W. Gross removed, by lateral lithotomy, an uric acid calculus of two drachm's weight, from this lad, one week ago to-day. (*Vide* No. for Sept. 12th.) The urine began to pass by the natural channel at the expiration of about twenty-six hours, and continued to do so for one day. At present it flows almost entirely by the wound. A dose of oil was administered on the morning of the fourth day. His diet has been plain, but nutritious, and he is, to all appearances, rapidly recovering. The constant burning pain, of which he complained, at the prepuce and head of the penis, and which caused him to be constantly pulling at these parts, has not troubled him since the stone was extracted.

Morbus Coxarius.

Case 1. John P., æt. 5. In the erect posture, the left knee of this boy is seen to be in advance of the other; the leg is slightly flexed upon the thigh, and the thigh upon the pelvis. During progression there is decided lameness, as evinced by dragging or shuffling of the right leg. He bears his entire weight upon the sound limb. The foot of the affected side rests upon the floor considerably in advance of its fellow; it is everted, and the limb is abducted, apparently elongated, and somewhat wasted. The corresponding nates is flattened and widened; the depression at

the back of the trochanter is almost effaced; the gluteo-femoral crease does not correspond with that of the opposite side, being prolonged down upon the thigh, or not running at a right angle with the internatal fold, the latter of which inclines toward the affected side. There is slight spinal curvature, the convexity of which corresponds with the diseased side.

On placing the boy in the recumbent posture, it was observed that there was a very decided arching of the lower portion of the spinal column, in consequence of which the posterior surface of the body did not come in contact with the table. On measuring accurately the two limbs from the anterior superior spine of the ilium to the inner condyle of the femur, it was shown that there was really no difference in their length, and that this symptom was, consequently, only apparent. This posture Dr. Gross believes to find its true explanation in the position of the pelvis, which is seen not only to be thrown forward on the affected side, but tilted downward; and this downward and forward twist of the pelvis is due to the abduction of the limb through muscular contraction, which causes the body to be inclined toward the affected side, when the foot is brought in contact with the floor.

The different motions of the joint are all impeded and extremely painful. On striking the heel or flexed knee with the palm of the hand, the head of the thigh bone is forced against the acetabulum, with the effect of producing great suffering, as evinced by the patient's wincing, and the expression of his countenance. Pain is also awakened by tapping upon the great trochanter, and pressure with the thumb over the front of the joint below Poupart's ligament, and behind the trochanter major are also productive of suffering. In addition to this local trouble, the boy has been complaining, for several weeks, of pain which is referred rather to the interior of the knee than to either side. His rest is disturbed at night by spasmodic starting of the limb, which causes him to scream out every half hour. The boy is fat, but his limb is somewhat wasted: he has coarse brown hair, and his eyes are of a hazel hue; but there is no history of inherited scrofula or struma, nor does the mother remember that he ever received an injury.

The pain about the hip-joint; the reflected pain at the knee; the sudden, sharp, spasmodic pain when asleep, and the lameness, all point to hip-joint disease; while the apparent elongation, the abduction, and the outward rotation of the limb, along with flexion at the knee and hip, and the appearances of the gluteal region, are all characteristic of the disease advanced far into the second stage, or a stage in which it is inferred that the capsule of the joint is distended by purulent fluid. And yet the predominant symptom of inflammation of joints, that is, increased heat, is wanting, and fluctuation cannot be detected, either in front of or behind the situation of the articulation.

Case 2. Samuel T., æt. 9, a patient at the Philadelphia Orthopædic Hospital, under Dr. Gross's care. This lad was attacked six months ago with acute rheumatism of all the joints below the pelvis, but particularly the knees, which confined him to his bed for four months. His attending physician discovered the trouble about his hip toward the latter portion of his illness, and did all in the way of treatment that could be done under the circumstances. His father died of phthisis pulmonalis. He has light-brown hair, fair, transparent, and delicate skin, gray eyes and long lashes, is peevish and much emaciated.

The appearances presented by this lad are directly the reverse of those seen in the former case. During progression, which is performed on crutches, he bears his entire weight upon his right limb, the left foot is seen to be raised from the floor, and on being stripped, the following points are well marked, and simulate dislocation of the head of the thigh bone on the dorsum of the ilium. The left knee and hip are strongly flexed; the thigh is firmly adducted, and rotated inward, so that the knee rests above, and is in advance of the sound one. The foot is inverted, and elevated in such a way, that the ball rests upon the opposite instep, the point of the great toe lying just behind the fourth metatarso-phalangeal articulation, while the heel is supported by the internal malleolus. The apparent shortening is two inches and a half; while, by actual measurement, the real shortening—for there is true shortening here—is about one inch. The limb is decidedly wasted, while its fellow is better nourished and abducted. The corresponding side of the pelvis is elevated, and the lumbar portion of the spine is markedly curved laterally, its convexity being toward the right side, as well as curved anteriorly. The buttock is shortened, more full than normal, and pointedly prominent at its external and upper portions. The gluteo-femoral fold is drawn upward, and the internatal crease is inclined toward the sound side. In the recumbent posture, the lad rests upon his shoulders, buttocks, and heels, and there is a high arch in

the lumbar and lower dorsal regions. The limb is firmly fixed in its abnormal position by the rigidly contracted flexors and adductors of the thigh. It can neither be abducted nor rotated outward, and efforts in these directions are productive of much pain. Pressure over the joint and striking the knee and the trochanter, awakens suffering, as in the former case, but not to so intense a degree. There is also pain referred to the knee, and the spasmodic nocturnal pains are exceedingly troublesome. There is no fluctuation nor heat about the joint, nor have abscesses ever opened.

All these symptoms are characteristic of far advanced hip-disease in its third stage, without there having been as yet any external evidence of suppuration. And what makes the case the more interesting, is the fact, that it is the first that has been seen by Dr. Gross, in which there was unequivocal evidence of there being spontaneous dislocation of the head of the bone on the ilium. When the disease has progressed as far as this, the shortening, is, as a rule, only apparent, since accurate measurement from the anterior superior spine of the ilium to the inner condyle, shows this to be unreal. But in this instance, accurate comparison reduced the shortening only one inch and a half, leaving, therefore, one inch to be accounted for, as will be pointed out below.

Morbus coxarius is essentially a strumous affection, analogous to white swelling of the knee, commencing either in the synovial membrane, or in the acetabulum, or in the cancellous structure of the head of the femur. Whether it ever originates in the articular cartilage, is still a mooted question, but there is every reason to believe that the osseous and synovial structures are primarily affected, and that the cartilage becomes only secondarily involved. It has beome quite the fashion, of late years, to deny the tubercular origin of the disease, or rather, to deny that it occurs almost invariably in scrofulous subjects, and attribute its origin, in the great majority of instances, solely to traumatic causes. But strumous inflammation does not imply the existence of tubercular deposits. Scrofulous inflammation of bone, for example, shows itself in two distinct forms—first, as a deposit of tubercle; and, secondly, as a low form of inflammation. The latter is most common, and differs anatomically only from ordinary osteitis in that the cancelli of the bone are dilated, and are filled, along with the lacunæ and canaliculi with a red gelatinous exudation, or mass of granulations. This exudation and enlargement of the cancelli constituted the features which distinguish scrofulous from ordinary osteitis, and yet there is no deposit of tubercle. So, too, in strumous synovitis, that membrane is covered by a gelatinous mass of granulations, which never becomes more highly developed; and this anatomio-pathological feature distinguishes synovitis occurring in scrofulous persons from synovitis set up in healthy subjects. Finding these pathological elements present in cases of hip disease, the affection must recognize a strumous origin. A blow, a fall, or a sprain will not excite this form of inflammation in a perfectly healthy child, but it will develope it in a scrofulous child. Scrofula implies that the tissues are badly nourished, that the blood is somewhat impoverished, that the constitution is feeble, that there is little formative power, and not, of necessity, the deposit of tubercle.

Searching for the causation of the disease in these patients, it was found that in the case of John P., there was no history of inherited scrofula, nor could the affection be traced to injury. But he is a good type of the strumous diathesis. The head is large; the hair coarse and dark; the intellect sluggish; the skin is harsh and thick; the belly tumid; he is quite fat, but the muscles are soft and flabby. Here then the disease is apparently of spontaneous origin, but the subject of it presents unequivocal signs of the strumous diathesis. In the case of Samuel T., on the other hand, the diathesis is transmitted from his father, who died of pulmonary consumption, and he presents another form of the strumous diathesis, which is characterized by fine connective tissues. His features are delicate and finely cut. The hair is soft and of a light brown color; the irides are gray; the lashes are long and silken; the subcutaneous veins are very perceptible beneath the fair and thin skin; and his mind is active. In this case, as in the first, no history of injury can be traced, upon the most careful inquiry, but the disease is set up in a lad of tubercular habit. Whether the rheumatic complication had any influence upon the causation of the affection is doubtful, since strumous affections of joints can rarely be traced to rheumatic trouble. It may rather, therefore, be regarded as an intercurrent malady.

Both of these cases present several features in common, which may be considered pathognomic. Pain and muscular contraction are the most prominent of these, and they may be discussed together, since the former induces the latter, which latter reacts in such a manner as to intensify the suffering. Reference is not here made to the dull, boring or aching pain in the

joint itself, which is due to structural changes, but to the so-called sympathetic pain at the knee, and to the reflex, starting, spasmodic pains which occur during sleep. In the early stages of the disease, more particularly, pain at the knee is nearly always present, and the fact is commonly overlooked that it may occur at other points than at the inner side. The hip-joint and the capsular ligament, it should be borne in mind, receive filaments from three distinct sets of nerves. To the round ligament passes a filament from the obturator nerve, which sends a branch to the inner side of the knee as well as to its interior. Inflammation of this ligament, or rather of the synovial membrane covering it, involving this filament, a sensation of pain will be experienced either within or at the inner side of the knee. Should, however, the anterior portion of the capsule be affected, the pain will be rather referred to the outer side of the knee, as branches are distributed to this region from the anterior crural nerve, which sends articular branches to that portion of the capsule. The posterior surface of the capsule is supplied with branches by the great sciatic trunk, which extends branches not only to the posterior aspect of the knee, but to the ankle, and indeed all along the posterior face of the limb; so that sympathetic pain may be experienced at any of the points supplied by that nerve, when the inflammation is seated at the back part of the joint. Dr. Gross has now under his charge a lad ten years of age, suffering from hip-disease, in its second stage, who experiences pain along the crest of the ilium, just posterior to the anterior superior spine. This anomalous pain he refers to the close proximity of the superior gluteal nerve to the joint, (if it does not even send filaments to it) the terminal branches of which are distributed to the gluteus medius muscle, and the integument covering it, at the point referred to. An appreciation of these anatomical facts will serve to explain these anomalous pains, and render great aid in the diagnosis of individual cases, as well as prevent those curious mistakes, which so often occur, of medicating parts which are not involved in disease. In the first of these cases blisters had been applied to the knee, under the mistaken notion that that joint was affected.

Far different from the suffering just explained, is that experienced by the patient during sleep, causing him to start and scream out frequently during the night. If he be watched during these paroxysms, the muscles of the affected limb will be seen to be spasmodically contracted. For a proper understanding of this phenomenon, it should be borne in mind that the articular surfaces are endowed with sensibility by the same nervous trunks which furnish motor filaments to the muscles moving the joint. The nerves of sensation being involved in the morbid action, transmit the impression to the spinal cord, from whence it is reflected to the muscles acting upon the articulation, and the result is that they contract and force the head of the bone against the acetabulum, through which the inflammation is farther increased. This is a most important point to be recognized, as it furnishes a hint, not easily overlooked, as to the proper management of the case. These pains are entirely involuntary and come on only during sleep, when the brain has lost its controlling action. They are most severe when the bone is inflamed just beneath the articular lamella, and set in much earlier when the bone is primarily involved than when the synovial membrane is primarily affected, thus affording a key to the diagnosis of which of these structures is earliest inflamed. The more severe and frequent these pains become, the more the limb wastes, and the muscles, from being the seat of clonic spasms, become finally rigidly contracted and structurally altered. If the injurious compression exerted upon the articular surfaces by this muscular action be not controlled, the morbid action will go on increasing until all the joint structures become involved and destroyed. In the first case the influence of the reflex action of the muscles is witnessed in the abduction and flexion of the limb, while in the second, the adductors and flexors are tensely contracted; and in both cases the muscular contraction can only be regarded as an effort on the part of nature to fix and keep the joint in a quiet condition.

But this attempt to keep the opposed articular surfaces at rest is attended with the worst results, since they are forcibly pressed together, thereby increasing the mischief. This is well seen in the case of Samuel T., whose affected thigh is firmly flexed and adducted, and at the same time greatly shortened, its axis being at an acute angle with the transverse axis of the pelvis. In consequence of the muscles forcibly drawing and pressing the head of the femur in this direction against the upper and posterior lip of the acetabulum, these bones have gradually disappeared by ulcerative absorption, permitting the small remaining head of the femur to slip up on the dorsum of the ilium, so that by accurate measurement there is about one inch of positive

shortening. The starting pains in this boy are excessively troublesome, and unless the reflex action of the muscles be counteracted, there is danger of the entire head of the bone, if not of the neck, disappearing. As it is, there is spontaneous dislocation, as shown by the amount of shortening; the pointed appearance of the hip, and the trochanter major, the summit of which lies above its natural level.

According to Dr. Gross's experience morbus coxarius occurs most frequently in male children, and attacks the left side in preference to the right in the proportion of five to one.

In the case of John P., chloroform was administered, and the actual cautery was applied behind the great trochanter. This was done not only for its counter-irritant effect, but to control the starting pains, and endeavor to procure the absorption of the effusion within the joint. The application of the hot iron has been much abused, and even now gives rise to acrimonious discussion on the part of writers, by some of whom it is condemned *in toto*. But a pretty extensive experience has convinced Dr. Gross of its great utility in the early stages of joint affections, when the patients are in otherwise good condition. It should not be employed in enfeebled subjects, nor should the discharge be permitted to wear out the patient's strength. It is, as a rule, best to permit the resulting sore to cicatrize at once. To prevent the starting pains, and keep the joint as quiet as possible, strict recumbency will be enforced. A splint will be adapted, which will encircle the pelvis and extend nearly to the knee, an opening being left behind to permit the free escape of the discharge which will result from the application of the cautery. In addition to this, the limb will be kept extended by weights, acting over a pulley, and attached to the limb by means of adhesive strips, and the foot of the bed will be raised four or five inches in order that counter extension may be made by the body. In this way the joint will not only be maintained in a quiet and fixed state, but the spasmodic action of the muscles at night will be controlled. Extension and counter-irritation suffice to counteract the startings of the muscles, so that opiates will be unnecessary for this purpose. Opiates, indeed, have little power to control reflex muscular action. They are almost useless, and, as they derange the patient's stomach, thereby interfering with his proper nutrition, they should be dispensed with. As the boy's general condition is good, general medication will be avoided. His diet will be plain, but nutritious; the entire body will be sponged daily with water at such a temperature as may be most agreeable to his feelings, and a mild aperient will be given when deemed necessary. Rest of the joint, absolute rest, continued as long as there is the slightest tenderness about the articulation cures these cases. Just so long as there is any evidence of inflammation, just so long must motion be prohibited.

In the case of Samuel T., Dr. Gross has endeavored to relieve the deformity and overcome the troublesome starting of the muscles by extension and counter-extension, by means of weights, continued for four weeks. But no impression appears to have been made on the disease. The shortening is just as great and the muscles are as firmly and rigidly contracted as before. The boy was, therefore, placed under the influence of chloroform, when it was observed that the contraction was not overcome, and subcutaneous section of the tensor vaginæ femoris, the sartorious, the adductor, and pectineus muscles, was practised. Under forcible manual extension the limb could now be brought down nearly to the length of its fellow, and abduction and rotation outwards were easily performed. Grating of the joint surfaces showed that the bones were denuded of cartilage. When the small punctures made by the tenotome have closed, extension and counter-extension, with fixation of the joint, will be made as in the former case. In this way it is hoped that muscular contraction will be effectually controlled, through which compression of the eroded articular surfaces will be avoided. In cases like this, myotomy is not only justifiable, but imperatively demanded, and the very best results may be expected from it. The relief from pain is instantaneous, and freedom from suffering may be confidently predicted if the extension be properly kept up. Unless this be done, the operation will have been useless, as it alone can only afford transient relief.

On account of his emaciated and enfeebled condition, the boy was ordered fifteen drops of the tincture of the chloride of iron, seven drops of the tincture of nux vomica, and one grain of quinine, three times a day, a nutritious diet, and a dessert spoonful of cod-liver oil, containing in solution five grains of bromide of potassium, night and morning. A moderate amount of milk punch will be allowed, and the secretions will be attended to.

—— The new law in Ohio, compelling all physicians to suspend practice who have never received regular diplomas, goes into effect October 1st.

Editorial Department.

Periscope.

The Natural History of Disease.

Dr. McElroy, of Ohio, contributes the following to the *Western Journal of Medicine:*

30th July, 1868. Wm. B., æt. 14; has been sick for several days; has constant headache, complete loss of appetite, tongue covered with dark fur, eye much injected with blood, and dull. Pulse beat little more frequent than natural; breathing but little, if at all, more frequent than natural; skin dry and warm, temperature 104°. Usually enjoys good health; was in swimming Monday of this, as well as Friday of last week, but says he did not stay in long either time; did not dive any either time; bowels had not moved for twenty-four hours.

Diagnosis—somewhat uncertain; possibly typhoid fever. *Prescription*—to have a good bath all over in the evening; to have three teaspoonfuls Epsom salts in a pint of water, to be drank within three hours; to have milk to drink *ad libitum*. No solid food.

31st July. Bowels have moved very freely, so much so that the mother is quite uneasy; had a very bad night, talked almost incessantly between intervals of getting up; head still aches, eyes suffused, tongue presents a fiery red line around edge and at tip, with enlarged glands shining through the thick coat near red edge; pulse nearly natural; temperature 104°; very restless.

To have tepid bath morning and evening, milk iced, or in any other way, all he can consume; no solid food; asks for crackers, but is refused.

Aug. 1st. Talked a good deal during the night, but slept some; headache still continues, has never ceased; complains of great soreness across præcordial region, almost entirely around the spine, on each side; breathing very short, cannot get a full breath; eyes still dull; soreness across præcordia prevents him moving; skin dry, but not very hot; pulse nearly natural; had a spontaneous movement of bowels yesterday evening, and again this morning, do not smell very offensive; passes water freely; could not find out anything in regard to it further than it is considerable in quantity; temperature 103½°.

To have a hot water poultice around præcordia; soup, milk, and some of the flesh of the mutton, morning and evening both, but no solid food or medicine.

Aug. 2d. Patient brighter this morning; slept more last night, but talked some, though less than any previous night; headache gone entirely; soreness and pain across præcordia also gone; full breathing; pulse slower than natural in the erect position, but about natural for the supine; tongue still red at tip, but no cleaning off yet; water passes freely, is dark colored; no sordes on teeth; did not like the mutton, but drank some milk and had a piece of bread; asks for cucumbers in vinegar; bowels have not moved since last report; wants to take a walk to-day.

To have the vinegar and water without the cucumbers; more mutton and milk with bread, if he desires it; no tea or coffee; thinks he would like some green apples; no medicine.

Aug. 3d. Patient still better; tongue rapidly cleaning up; no pain, eyes clearing up, pulse and breathing natural; temperature 98°. No movement of bowels yet, but passes water freely. Thinks he must go out for a walk to-day, and should like some blackberries, and thinks it would be nice to go blackberrying. Wants to sit up to-day, and thinks he is well.

To have milk and mutton, and bread and butter to-day. If bowels do not move, to have teaspoonful salts in tumbler of water to-morrow morning. Patient considered as convalescent, and recommending mother to keep him in the house for a day or two, dismissed myself from further service until recalled.

The features of this case, for which it is reported, is the treatment of a somewhat formidable looking case in the beginning, without medicine, except the single dose of saline cathartic. Looking at it through bilious pathology, there was a fine chance for a good dose of calomel, and if it had been given and followed by a senna draught or castor oil, would have shown a very satisfactory amount of bile in the dejection. Then, again, Dover's powders would have, perhaps, done good; and there were respectable indications for quinine. But none of these were given, and the case convalesced in four days. Would it have terminated any better or sooner with more active interference with medicine?

The report of this case and the comments upon it are by no means to be taken as indicating any want of faith in the power of medicine or the value, to patients and friends, of professional services. On the contrary, I am vain enough to think my services were of the highest possible importance in the case, not only in withholding unnecessary medicine myself, but preventing its exhibition by others, when not needed. I simply

saw no urgent necessity for medicine, and consequently gave none.

Had medicine been given, and the case convalesced in a week or ten days, the recovery would have been noticeably prompt, and the medicine and my skill received credit for that, which the event proved neither deserved.

Sun-Stroke.

Dr. J. C. Peters (in the *Medical Gazette*) says: "This disorder is call heat-apoplexy, and is supposed, by some, to be allied to simple apoplexy, or that variety which sometimes proves fatal without leaving any traces of congestion, effusion or extravasation behind; by others it is compared to alcohol-apoplexy.

"There are two theories of the disease: 1st, that it arises from liquefaction and expansion of the blood; 2d, from a depressed condition of the cerebro-spiral and sympathetic nervous systems. The mortality is very great, at least 40 to 50 per cent., because this disease attacks by preference those who are already sick or debilitated, or accustomed to indulge too freely in spirituous drinks. Is has been noticed that those attacked have often been affected for a few days previously with suppression of perspiration and irritability of the bladder; their nights have been sleepless, and attacks of vertigo, and a sense of weariness have been complained of. Then the patient becomes listless and stupid, merely says that his head feels queer, and may be dead in twelve hours more. But the attacks generally commence with faintness and great prostration, thirst, great heat and dryness of the skin, and tightness across the chest, while the pulse is so slow and feeble that it can scarcely be felt. Then follow symptoms of stupor and insensibility, with loss of speech. When the patient becomes comatose the skin is found very hot, the pupils contracted, the conjunctiva congested, the pulse hard, full, and rapid, and the breathing difficult. In some cases tetanic convulsions occur. Just before death the pupils dilate, and the action of the heart becomes feeble and intermitting.

"In some cases the common treatment with cold to the scalp and the frequent adminstration of stimulants is allowable; in others it is very injurious. When there is a combination of alcohol- and heat-apoplexy, of course spirits must be avoided, or else given in spts. mindereri, although hartshorn and ginger, or some hot drops may be required. When there is congestion to the head, with great heat of skin and a full hard pulse, cold may be applied by pouring a continuous stream of water over the head and chest, and cooling tonics and astringents, like dilute *phosphoric acid*, should be freely given.

"When there is utter exhaustion, and the pulse very weak and the skin cold, ammonia and brandy should be frequently given in doses proportioned to the depression, and persevered with to the last.

"When recovery takes place, convalescence may be retarded by congestion of the kidneys, which occurs in very many cases; or by dilatation of the vessels of the brain from a debilitated or subparalytic state of their walls; by partial paralysis and great prostration of strength; by severe headache or vertigo; by confusion and dulness of mind, while symptoms of paralysis or of insanity may set in months after an apparent cure. To obviate the major part of these troublesome and threatening effects, the free use of dilute *phosphoric acid* is almost indispensable."

The Hot Springs of Arkansas.

Dr. P. H. Ellsworth, in the *Jour. of Mat. Med.* gives a number of different analyses made under the guidance of Dr. David Dale Owen, State Geologist.

In drawing conclusions from these analyses, he adds, "I would give as the constituents of these waters, omitting however, the proportions, silicates with bases, bicarbonate of lime, bicarbonate of magnesia, alumina, with oxide of iron, carbonate of soda, carbonate of potash, sulphate of magnesia, oxide of manganese, sulphate of lime, bromine a trace, iodine a trace, organic matter a trace. There may exist a trace of lithia (carbonas) and arsenic a trace, combined with iron or lime, yet it is not indicated by the above experiments, and we have no assurance that they exist.

There are fifty-four springs in all, which have a mean temperature of 134° Fah., and range respectively from 63° to 150° Fah. They totally discharge 317 gallons of water per minute. The springs are situated on the western slope of Hot Spring Mountain (which is a margin of the Ozark Mountains) at an estimated elevation of 360 feet above the level of the sea, and about fifty-five miles westerly from Little Rock.

Invalids of a colder latitude will find this a delightful resort for the fall, winter and spring months. These waters enjoy great celebrity for their benign effects over rheumatism, gout, skin diseases as a class, scrofulous ulcerations, spinal diseases, nervous affections generally, uterine diseases as a class, mercurial, mercurio-syphilitic, and all forms of syphilitic diseases, over which maladies, and in fact, many forms of chronic

diseases, its effects are truly astonishing. These waters are highly stimulating, and are considered by the majority of patients as a species of luxury. This effect is due to the large quantity of free carbonic acid which the water contains.

On Paracentesis Thoracis.

The following are the chief points of interest in a contribution from Dr. Bartels, of Kiel, on the Operative Treatment of Inflammatory Exudations into the Pleural Sac. Abundant exudation into the pleural sac may cause sudden death by mere mechanical obstruction of the circulation or respiration; the longer the exudation has been collected, the smaller are the chances of complete recovery, by reason of the changes which take place in the compressed lung and in the walls of the thorax. Another change associated with abundant exudation into the pleural sac, whatever the nature of the fluid, is the tendency to chronic inflammatory processes in the compressed lung, and also in the lung of the opposite side, which inflammation may lead to deposition of tubercle. For this reason, even serous fluid should be removed by tapping, whenever there is no severe febrile disturbance, and when the exudation has caused displacement, and shows no tendency to become absorbed. Serous exudation is best withdrawn through a trocar, care being taken to exclude the air. When the fluid is purulent, constant flow should be favored by the formation of a large thoracic fistula, since the pus is generally reproduced after the use of a trocar, and the strength of the patient is exhausted by the prolonged and profuse suppuration. If, when puncturing a pleural sac for supposed serous exudation, the fluid be found of a purulent nature, the punctured wound formed by the trocar should at once be converted into a wide fistula opening. The purulent nature of an exudation may be diagnosed, when the patient is suffering from pyæmia, puerperal fever, etc., when fever exists although the progress of the exudation has been arrested, and, finally, when there is œdema of the subcutaneous areolar tissue of the thoracic wall on the affected side. A pressing indication for immediate opening of the pleural cavity is the occurrence of pyo-pneumothorax, since there is a risk of septic poisoning when air passes through a pulmonary fistula to a pleuritic exudation. After operating for purulent exudation into the chest, it is necessary, in order to prevent putrefaction of the remaining pus and of that subsequently secreted, to clean out the cavity, either by blowing in air through an elastic catheter, or by injecting water or a weak solution of common salt. This cleansing should be repeated daily as long as pus is secreted, and the cavity is capable of holding a certain quantity of injected fluid. Dr. Bartels states that, even in purulent exudations occurring with pyæmia or puerperal fever, the fluid should not be allowed to remain, since experience has proved that, in cases so unfavorable as these, paracentesis may result in cure.—*Deutsches Archiv für Klinische Medicin*, Bd. iv, Heft 3, 1868, in *British Medical Journal*.

Reviews and Book Notices.

NOTES ON BOOKS.

An interesting pamphlet is the Fourteenth Report upon the Registration of Births, Marriages, and Deaths in the State of Rhode Island for 1866. It is prepared under the direction of Hon. J. R. Bartlett, by Dr. E. M. Snow, and comprises all the information given in previous reports, with such additions and improvements in the tables as experience has suggested. Full information is included of the epidemic of cholera which visited the State in 1866. It should be added to the library of all interested in vital statistics.

On several occasions we have adverted to the suggestive papers on Anatomy and Morphology written by Dr. Burt G. Wilder. Last June he read one on "Extra Digits," especially sexdigitism, before the Massachusetts Medical Society, which has appeared in the second volume of their Transactions. It is a most thorough analysis of all the observations of this deformity before the profession, and contains a number of new and interesting views. The author is anxious that investigations into these anatomical anomalies be conducted more accurately and extensively than heretofore, and for that purpose has drawn up a series of questions to be answered in recording cases of extra digits, and will send copies of the blank to any one who may apply. His address is Cornell University, Ithaca, New York, and we hope his studies will be aided by that of our readers who may know any cases of extra digits.

Dr. Armaud Fumouze, pharmacien of the first class, sustained last year a thesis on Cantharides (*De la Cantharide Officinale*, Germer Bailliere, Paris, 1867), a copy of which we have received. It treats of the natural and chemical history of the drug, the causes which alter or diminish its properties, and the insects and acari which are found in it. Five excellent lithographic plates illustrate the thesis, and there is contained a

number of original observations as well as a careful digest of previous knowledge on the subject.

"The Pharmacist" is the title of a new journal to be published quarterly by the Chicago College of Pharmacy. It promises well, and intends to devote its pages especially to the interest of the drug trade of the West.

The First Annual Report of the Board of Health of Cincinnati for the year ending February 29, 1868, indicates a laudable intention on the part of that municipality to care intelligently and actively for the health and comfort of its inhabitants. Many of the statistics given will be found valuable, and evidently the city is in earnest in the good work. An additional pamphlet is published by order of the Board for general distribution, containing the State law, city ordinances, code of health laws, and rules and regulations of the Board, thus familiarizing the people with the nature of the duties which a board of health sets out to perform.

Those interested in questions of "Sacred Embryology" will be glad to learn that a French Abbé, Father Debreyne, has just published in Paris a work called by the formidable title "Moechialogie," a treatise on the sins against the sixth and ninth commandments of the Decalogue, and all the matrimonial questions connected directly or indirectly with them; followed by a practical abridgment of sacred embryology. It contains all the recent discoveries of physiological, natural and medical sciences and modern legislation, and is "destined exclusively for the clergy."

Of medico-theological moment is also the thesis of Dr. F. J. Grenier, "Etude Médico-Psychologique du Libre Arbitre Humain," it being the thesis which has given rise to such virulent attacks on the Paris Medical School, to which we referred at length some weeks back. It is said, however, that in this case the devil is not so black as he is painted, and that Grenier is not so rabid as either Cabanis or Bichat, those former lights of the French medical world.

Somewhat in the same line of thought is P. Tremaux's "Principe de la Vie Universelle." The learned author derives all life and all motion from the state of matter resulting from this simple fact, of which everybody is constantly witness: Heat tends to equalize itself, consequently it attracts in the ratio of its differences, etc.

The Proceedings of the Georgia Medical Association, at their last meeting in April, have been published to the number of one thousand copies, and distributed throughout the State. Their contents have a bearing on the Atlanta Medical College controversy, but we have not the time to make an abstract of them.

Constipated Bowels; the Various Causes and the different Means of Cure. By S. B. Birch, M.D. From the third London Edition. Philadelphia: Lindsay & Blakiston, 1868. 1 vol., 12 mo., cloth, pp. 181. *Price*, $

As the author very truly says at the commencement of his work, "There exists, perhaps, no derangement of the human organism which presents more troublesome little difficulties to the medical practitioner" than this of constipation. Moreover it has never before been handled separately in a practical convenient monograph by an experienced writer. Constipation is often the first of a long series of digestive troubles, and nearly always an accompaniment of them when they arise. Practitioners, therefore, will be glad to get such a treatise as this. That it has passed to a third edition in England is proof that it met a widely felt want.

After an introductory chapter the author passes to the various causes of constipation, then states the general principles and details applicable to every modification of constipation, and concludes with a chapter on treatment with reference to special causes and complications. The only principle of successful treatment—to manage each case on its own merits—is kept steadily in view, and many prevalent errors in diet and domestic medicine are pointed out.

Diseases of Children. A Clinical Treatise based on a Lecture delivered at the Hospital for Sick Children, London: By Thomas Hillier, M. D., Lond. Philadelphia: Lindsay & Blakiston, 1868. 1 vol., 8vo., pp. 402, cloth. *Price*, $3.00.

This is not so much a compendious work on infantile diseases, as a series of brief monographs on the more important complaints which have come under the author's notice while physician to the Hospital for Sick Children in London. This hospital only admits children over two and under twelve years, so there is little reference to the diseases of children under the first-mentioned age. So also the more exclusively surgical complaints are omitted.

Though these omissions cut off a goodly number of the ills that childhood is heir to, they unfortunately leave enough to allow our author to write a large volume, which is all the more valuable for its thoroughness in those he does take up. These are pneumonia, pleurisy, rickets, tuberculosis, diphtheria, hydrocephalus, pyæmia, chorea, paralysis, ascites, scarlatina, typhoid

fever, skin diseases, epilepsy, and convulsions. They are treated in the manner of clinical lectures, abundantly illustrated with cases and autopsies. A great deal of attention is given to diagnosis, and in the matter of therapeutics the author, while not averse to the old and tried remedies, (calomel in diptheria, p. 159), usually lays much more stress on good nursing, carefully regulated diet, fresh air, and cleanliness, than on any drugs—which is good news for the little ones. We hope that his views on these points will be extensively read and adopted, for they are thoroughly sound, and up to the times.

The Transactions of the New Hampshire Medical Society, Seventy-seventh and Seventy-eighth Anniversaries. Manchester: 1868. Pp. 142.

Medical Societies ought to keep careful records of their transactions, and ought to publish them whenever they can thereby promote the ends for which such societies are organized. This is a truism, yet it is worth saying, because it is a sort of corollary, that when the published transactions do not subserve this end, it is not worth while to print them.

So far as promoting friendly feeling, facilitating professional intercourse, disseminating a knowledge of professional etiquette, and so forth, are concerned, State societies and consequently their transactions, are valuable. But so far as extending medical knowledge, or reporting statistics, or aiding individual research, are concerned, they are not what they ought to be.

In the present volume there is only one original practical article. It is by Dr. A. B. Crosby, on Septicæmia, and is well thought out and well presented. He finds great advantage from the bisulphites given early, and recommends that after all capital operations and severe mechanical injuries, they should be given from the outset.

The other papers have little or no general interest, except one by Dr. Whipple, on the prosecution of medical men, an extract of which we lay before our readers elsewhere.

A Veterinary Journal Needed.

The *Maine Farmer* says:

"In mentioning the death of Dr. Dadd in our last issue, and the publication of his '*American Veterinary Journal*,' some years ago, the thought occurred to us that a work of similar character is now very much needed, and would, without doubt, be well sustained, provided it was conducted with honesty and ability. Diseases of animals are very common among us, and farmers need full and reliable information upon the subject—more so than what is given in general agricultural journals. Periodicals devoted to a specialty succeed now where they would not have succeeded a dozen years ago, and we call upon some one to start such a journal. It is much needed."

All very true. But a veterinary journal, such as that conducted by Dr. Dadd, will never succeed, simply because it was not founded on the broad principles of rational medicine. Dr. Dadd was an "Eclectic," and all his ideas were cramped by his adherence to the contracted notions of the followers of Thomson, who now sail under the banner of "eclecticism," so-called. A veterinary journal, on a proper foundation, ought to, and we think would succeed.

Medical Journalism in Indiana.

In looking over the Transactions of the Indiana State Medical Society for 1868, our attention was arrested by a portion of the address of the retiring president, Dr. J. S. Bobbs, which refers to the want of a medical journal in that state. One would naturally think that none existed there. Yet Dr. B. must know that in the very city where he practices and lives, is published one of the best medical journals in the country—the *Western Journal of Medicine*. If Dr. B. was so little acquainted with medical literature as not to know this, his criticisms do not carry very much weight; if knowing it, he in such a connection deliberately suppressed all reference to Dr. Parvin's labors, it must have been from motives out of place in the President of a State Medical Society.

Ventilation.

The *Scientific American* gives the following very brief, though not altogether satisfactory view of the philosophy of ventilation.

"How to get the pure air is the question; a purely mechanical one. Hot air rises—cold air falls. The impure gases do the same thing; therefore it is only necessary to provide for the escape of foul gases at the bottom of a room, provided it is heated with warm air, or at the top, if heated by radiation; the pure air being admitted in the latter case through openings protected so that strong currents shall not be formed, and the exchange of air being fully provided for by passing the vitiated gases through flues, or drawing them off by fans or other apparatus.

There is the whole thing in a nutshell, and all the scientific discussion of things upon the earth, or under the earth, cannot make it more so; so the *Scientific American* believes, and we believe its practical readers will concur."

Medical and Surgical Reporter.

PHILADELPHIA, OCTOBER 3, 1868.

S. W. BUTLER, M. D., & D. G. BRINTON, M. D., *Editors.*

☞ Medical Society and Clinical Reports, Notes and Observations, Foreign and Domestic Correspondence, News, etc. etc., of general medical interest, are respectfully solicited.

Articles of special importance, such especially as require original experimental research, analysis, or observation, will be liberally paid for.

☞ To insure publication, articles must be *practical, brief* as possible to do justice to the subject, and *carefully prepared*, so as to require little revision.

We particularly value the practical experience of country practitioners, many of whom possess a fund of information that rightfully belongs to the profession.

MECHANICAL THERAPEUTICS.

The closing article of Dr. BANNING's series on mechanical therapeutics appears in this number. In order to publish it entire, we have added a number of extra pages. Dr. BANNING'S articles have attracted much attention, and his ideas have been practically carried out by many physicians in every section of the country—with what result, it is for them to say. So far as we have heard, it has generally been favorable. We hear of one physician in this state who has within the past two years expended two thousand dollars on apparatus for the treatment of cases on the principles laid down in these articles, and with satisfactory results. Dr. BANNING has done his duty—placed his ideas before the profession effectually—it now remains for the profession to receive or reject them according to the success of the proper application of his principles.

MEDICO-LEGAL RELATIONS OF CHLOROFORM—CASE OF IGNATZ HURST.

The important position which chloroform holds as a toxic agent, and yet the unsatisfactory character of the information we possess about it in this relation, have been adverted to several times in the REPORTER during the past year. The case of Ignatz Hurst, a German of Hoboken, New York, is an illustration not only of this uncertainty, but of the indefiniteness with which many very important investigations in legal medicine are conducted. Hurst died suddenly on September 15th at 3 o'clock in the morning, and Coroner White at 10 o'clock held an inquest on his body.

The deceased had been crazy for some days previously, and at half-past one A. M., on the 14th was so violent that Dr. Nast was sent for. The doctor came to the rear house of 136 Hudson street, Hoboken, where the patient lived, and to quiet him administered a double dose of chloroform by inhalation, the first not having taken effect. The patient then slept for some time, but at 2 A. M., his appearance was such as to lead those minding him to believe that he was dead. The doctor was again sent for, and after having arrived applied something to Hurst's feet to test the assertion of his death. This showed that the patient had died, and the fact having come to the knowledge of the coroner, a warrant was issued for the doctor's arrest, and an inquest ordered immediately. At the investigation the doctor was defended by MORRIS BRETZFELD, Esq., and the crown was represented by J. H. LYONS, Esq. The first witness examined was Henry HOFFMAN, 235 Washington street, Hoboken, who deposed that since 9 o'clock the previous evening he watched over Mr. Hurst, who was not sick, but crazy; about half-past one the patient got very violent, and Dr. NAST was sent for. The doctor came and ordered some medicine which, he said, would quiet him for an hour or an hour and a half. The medicine was sent for at once, and, after having been received in the house, was given by the medical gentlemen to the patient, who spoke a few incoherent words. Witness was not in the room at the time the medicine was given. About half an hour subsequently the patient got easy, and then commenced to sleep, but not having awoke at 3 P. M., and being to all appearance dead, the doctor was again sent for; on his arrival he said he was not sure whether the man was dead or not, but subsequently declared life extinct. JOSEPH WEISS and Martha CHRISTIAN, who had also watched the deceased before his death, corroborated the evidence of the last witness in many particulars, and added: At half-past one the doctor gave him chloroform; he

said so; a sponge was put to his nose; it had not at first the desired effect, but a second application sent him to sleep; the sponge with chloroform was applied in all for five minutes.

What the medicine administered was does not seem to have been inquired into, still less its amount. Nor does any evidence show how much chloroform was given by inhalation, nor was inquiry made whether it was given with the usual and necessary precautions.

The character of the dementia and its cause were not put in evidence, though these facts would have the gravest bearing on the propriety of the treatment, as if the symptoms arose from delirium tremens the chloroform would have been nearly certain to endanger life.

Let us now pass to the cadaveric examination which was made by Drs. Chabert and Benson. How long subsequent to the period of death is not mentioned, and apparently excited no attention, though in death by chloroform it is of the greatest weight as we shall see. These gentlemen deposed "that the man was laboring under a complication of diseases, the brain and its membranes showed signs of recent inflammation, the lungs were very much congested, the heart was empty, and liver somewhat enlarged; there was sufficient evidence of disease of the brain to have caused death; chloroform did not directly act on the brain, but was taken into the blood by the lungs; a little of it would not hurt him; in fact a violent man such as he, weighing 180 lbs., would require a great deal to put him to sleep."

Now let us turn to p. 477 of the Reporter, vol. xviii., and read the anatomical characteristics of death by chloroform as given by a writer in the *Prager Vierteljahrscrift:* "The anatomical characteristics of death by chloroform are pallor of the countenance, dilatation of the pupils, rose-colored spots on the extremities, slight cyanosis, injected base of the tongue, *congestion of the lungs*, emphysema, *soft heart*, *slightly injected pia mater.*" Here it is seen that several of the lesions stated by the physicians who made the cadaveric examination as the probable cause of death, are in fact to a certain degree characteristic of poisoning by the drug.

Their testimony further was that "congestion of the lungs was the direct cause of death, and chloroform had nothing to do with it."

Apart from the vagueness of the nosology of this statement, this is a constantly present and significant sign of the anæsthetic death.

They further stated that, "there was no smell of chloroform from the body, as there would have been were it the cause of death; under the circumstances the doctor was justified in resorting to some measure to quiet him."

This assertion merits investigation. It is difficult to see how the absence of the peculiar odor can prove so much. It is proven that a "double dose" of chloroform was given the previous day. Exactly how much will cause death in a given case it is impossible to say. We were once about to operate for strangulated hernia, when our patient, a male adult, expired on the table before he was touched with the knife, after taking six drachms, administered by a competent surgeon, under favorable circumstances.

How long the smell will remain in the body is yet not ascertained, and depends largely on attendant circumstances. From two to three hours after administration it is impossible to detect it in the breath. But certainly when we never know the amount which is toxic in a certain case, it is rash to say that because no smell is present, it could not have been the occasion of death.

In this critique on the case we have no intention to cast any doubt on the decision of the inquest.

The jury found that "deceased came by his death from congestion of the lungs, and we exonerate the attending physician from all blame," and we have no wish to question the latter clause. But we feel it a duty to call public attention to the unsatisfactory manner in which inquests are too often conducted. What we need is the professional expert in such cases, he who has added to a careful perusal of authors a close and practical study of the effects of toxic agents on

the organism, and who can confidently discriminate between the lesions of a poison and the signs of a disease.

Notes and Comments.

Treatment of Placenta Prævia.

Dr. Chassagny recently brought before the Paris Academy of Medicine some new hæmostatic means to be employed in placenta prævia, both before and after delivery, which seem worthy of note, as both original and likely to be useful. Before delivery, and without allowing the hemorrhage to become serious, Dr. C. employs an *intra-uterine tampon*. This is done by introducing a blunt sound, four or five lines in diameter, containing in its cavity a ball of caoutchouc, when distended, the size of a large walnut or orange. The ball is inflated immediately above the cervix, and not only acts as an efficient tampon, but as an excellent dilator. When it is expelled by the uterus, the dilatation is sufficiently large to permit any obstetrical manipulations. After delivery, Dr. C. proposes to arrest any hemorrhage by what he calls the double hæmostatic balloon. This is composed of two caoutchouc balls, the lower connected with the other by a short hollow tube, with an independent orifice. The upper balloon is introduced into the uterus and inflated; the lower is then inflated in the vagina. Thus a pressure on the cervix is caused, and both uterus and vagina are filled until the contractile power of the former is restored. These are ingenious contrivances.

Maternal Impressions.

In a recent number of the *Psychological Journal*, Dr. Hammond argued forcibly for the reality of these impressions on the infant *in utero*. We have generally considered them superstitions of the populace, but it would seem that they are occasionally more than this. We have been amused, however, to see in two papers, one from New England, and one from Virginia, sent us recently, sober descriptions of two cases, in one of which the child was born headless, yet living, because the mother had witnessed a man decapitated by a cannon ball during her pregnancy, and in the other, a son labored under the singular difficulty of being unable to speak to his father. This was supposed to be because, for a month or two, his mother had not been on speaking terms with his father. These stories show how ready the public is to endorse the marvellous.

Prof. Austin Flint in Buffalo.

Prof. Austin Flint, Sen., was recently the recipient of a very flattering testimonial of the regard of the medical profession of Buffalo, where he spent more than twenty years of his professional life. Happening there on a visit, he was invited by nearly forty of his old professional friends (which must have comprised nearly or quite all the physicians in the city) to an entertainment. His engagements were such, however, that he was obliged to decline it, which he did in a very neat letter, acknowledging the flattering compliment so unexpectedly paid him.

Iowa State University.

At the annual meeting of the Board of Trustees of the Iowa State University, held at Iowa City, September 17th, a medical department of the University was created, to be located in Iowa City. A course of lectures will commence in September, 1869. The faculty is not yet announced.

Another "Outrage."

Here is another "outrage" by a person who wishes to get rid of a "disagreeable relative." We quote from the Court proceedings in a New York daily.

"It appears that Marinus W. Cooke, who appeared at the Essex Market Police Court, and asked for a warrant to cause the arrest of his brother-in-law, on a charge of having caused him to be put into the Lunatic Asylum, and attempting to poison him, is not wholly sane. Justice Mansfield at first thought he was sane, and ordered the warrant to be given, but on hearing him say that he wanted to have some angels arrested too, he had him conveyed out of court."

Bartholow *v.* Blackman.

The controversy between Drs. Bartholow and Blackman, of Cincinnati, has been put an end to by a Committee of the Faculty of the Medical College of Ohio. This committee allowed a reply from Dr. Bartholow—"said reply to be free from personalities." It is merely a rebuttal of Dr. Blackman's charge of plagiarism, which we have already expressed our opinion was unfounded. Let us hope that the whole matter will now be dropped.

[☞ *Readers of the* Reporter *are invited to send us copies of local Newspapers, and similar publications, from all parts of the country, which contain matters of interest to the profession. They will be thankfully received, and acknowledged under "Communications received."*]

Correspondence.

DOMESTIC.

Prolapsus Uteri.

Editors of Medical and Surgical Reporter:

In a former number of the Reporter (May 30, 1868), also in the Compendium, Part II, July, 1868, page 231, appears a report of a very interesting case of prolapsus uteri, as read by Dr. Erich, before the Baltimore Medical Association. In my humble judgment, the worthy Doctor has, in making his case known to the profession, together with his peculiar and novel mode of treatment, rendered a service of incalculable value, for which he merits their profound gratitude and esteem. The reasons for such a conclusion I consider sufficiently apparent in the following notes of a case lately under my care.

Mrs. ———, æt. 50, of German descent, and mother of five children, has been a sufferer from uterine trouble for 20 years, for which she has received no treatment whatever. About five years ago she first discovered the uterus presenting at the vulva, to which she gave no heed until it became procident, when she merely supported it by a strip of cloth in the form of a T bandage. She suffered at times considerable pain when at hard labor; but, possessing as she did, a remarkably robust, hale constitution, she did not become debilitated, but continued about her ordinary housework and frequently went to work in the field digging potatoes, and doing other farm work. In this condition she remained until three months ago when she was taken sick with the symptoms of a common cold, when her former pains were aggravated so much as to confine her to bed. I was called, and after hearing her former history, proceeded to make an examination of the uterus. Found it procident, hanging down between the thighs about six inches external to the vulva; the os and cervix in a state of ulceration, hypertrophy and chronic inflammation, horrible to behold. The whole made a picture very like one given on page 240 of Transactions Medical Society State of New York, 1863. She tells me it had been procident for five years, and its appearance certainly corroborated her statements. The mucous membrane had ceased to secrete, was perfectly dry and appeared to the eye like the natural integument of parts external.

The uterus would not remain in situ when replaced, and all varieties of pessaries introduced for its support proved equal failures. I had just received my Reporter containing a report of Dr. Erich's case, and proceeded at once to adopt his plan. Prepared a piece of No. 12 common iron wire (could not get the tinned wire), bent it to the required form, slipping on it for a covering a piece of gum elastic tubing (a remnant of a broken hand ball apparatus for freezing, etc.), and, bringing together the ascending portion, and covering with cloth down to the pubic portion, I leave the pessary proper without the gum elastic bag as described by Dr. Erich, and with this simple instrument, which occupied not more than half an hour in its construction, I hastened to my patient, and proceeded at once to replace the uterus by simply applying to the os the upper surface of the horizontal portion of the pessary, and after carrying the uterus gently within the vulva; with the ascending portion as a lever, lifted it upward to its exact normal altitude and position with perfect ease and with but very little pain. The upper end was made fast to the corset, and after a moment's manipulating the instrument was made (as she remarked) "*to fit like a boot.*" There has not been the least pain or uneasiness felt by the patient since it was applied; she got upon her feet instantly, and went to work a week after at washing and other hard labor. A few days ago she removed the instrument, and says the "*womb stays put,*" and gives her no trouble whatever. The discharge which caused her much trouble has all ceased, and judging by the "touch" the hypertrophy was very much eliminated, the os contracted, and it presents a healthy surface to the finger. The instrument is no bar to either micturition or defecation, and does not get in the way sitting or standing; is light, easily removed and replaced by the patient; and, in short, in my humble opinion, is as near perfection as anything that can be devised for uterine support, either for prolapsus, retroversion, or anteversion; these varieties only requiring a modification of form to meet their several indications. I am confident that no other procedure short of episoraphy could have secured in this case like results; and when I consider with what remarkable simplicity the whole is effected, I am at a loss which most to admire; the skill which devised it, or the noble principles involved in making its advantages patent to the profession. Furthermore, I can but congratulate the editors of the Reporter on their success in furnishing the profession with a first class Medical Journal freighted with the best current medical literature of the day, conspicuous among its practical advantages being its Reports of Medical Societies and their doings.

J. T. Barnes, M.D.

Clifton Park Village, Saratoga Co., N. Y.

Walter Walker, M. D.—Obituary.

Died, September 10th, 1868, in the city of Chicago, of gastro enteritis, WALTER WALKER, M. D., of Rochester, New York, aged 31 years and 10 months.

The deceased was a graduate of Jefferson Medical College, and a most accomplished gentleman.

His mind was eminently practical, and for years he labored perseveringly and successfully to elevate the standard of ophthalmic and aural surgery to the highest point, in the north-west.

Several surgical instruments invented by him have grown into common use, and his active mind was constantly engaged in contemplating improvements. In fact he never seemed so well satisfied with himself as when earnestly laboring to benefit that branch of surgery to which he was devoting his life.

Kind and courteous to all, he was really and truly a Christian gentleman: earnest and persevering in the pursuit of medical knowledge, he was a sincere and blessed help to the afflicted.

He leaves a wife and three children. May God help them to believe that the terrible darkness that follows the death of such a husband and father, is indeed lessened by the vivid halo of an untarnished name—the truest and noblest heritage that a man can leave to his wife and little ones.

And when they come to stand by his (now distant) grave, may God in his goodness, soothe their bitter agony with the tender consolation, that this is the grave of a father and husband, who died young in years, but old in all that makes life worth living for; because he was true to himself, true to his family, true to his friends, and true to his God. J. D. M. C.

Chicago, Sept. 1868.

News and Miscellany.

Captain Hall's Discoveries in Relation to Sir John Franklin.

Dr. GOOLD, a citizen of Dublin, who has spent two years in the Polar regions, arrived at New York recently, bringing fresh information concerning the fate of Sir JOHN FRANKLIN. Dr. GOOLD, as the telegraph briefly informed us, states that he spent considerable time with Captain HALL at Repulse Bay, in August, 1867. The latter informed him that he had traced the fate directly of two of the survivors of Sir JOHN FRANKLIN's party. From Dr. GOOLD's notes it seems the proof of Captain CROZIER's fate is in Captain HALL's possession. Captain CROZIER and one of FRANKLIN's crew died in the vicinity of Southampton Island, while endeavoring to make their way to that place, in the belief that they would there meet a whaler to convey them back to England. The Esquimaux who furnished these facts to Captain HALL, gave him a gold chronometer, besides some silver trinkets belonging to CROZIER's outfit. Captain CROZIER passed through two tribes safely in his journey to Southampton Island. After that all trace is lost. Captain HALL inclines to the belief that he and his companion were murdered by the natives. According to native information the last six survivors built a cairn, or rude vault of rocks, and deposited in it documents and valuable articles, which Captain HALL is determined to recover, even if he has to give battle to the tribe who is in possession of the articles. Captain HALL is abundantly able to prosecute the search, and to defend himself from the assaults of the natives.

An Apt Reply.

The venerable Dr. BOUILLAUD, of Paris, is a wit, as well as a great diagnostician, and an unterrified bleeder. The following story is told of him:

M. GUIZOT gave, in 1846, a ball, at which the most eminent people of Paris were present; among them were M. THIERS and Dr. BOUILLAUD. The yellow fever was then at Marseilles, which M. THIERS represented in the Chamber of Deputies. He asked Dr. BOUILLAUD to explain the disease. The Doctor gratified M. THIER's request, but failed to satisfy him. He exclaimed, "Doctor, I have studied that disease, and I have seen nothing you have described." Dr. BOUILLAUD replied: "M. THIERS, you are familiar with history, and write it better than most men; do you remember this historical incident?—It is said that when Hannibal was Prusias's prisoner, he heard of a man named Fabius, who delivered admirable lectures on military tactics and the art of war. Hannibal wished to make Fabius's acquaintance; he sent for him; he heard him, and exclaimed, '*Multos vidi delirare homines, sed numquam magis quam Fabium.*'"

—— A New Hampshire paper says: "The greatest age ever attained in this State by any person whose age was positively known, was that reached by Mr. LOVEWELL, of Dunstable, who died at 120. WILLIAM PERKINS, of Newmarket, reached 116; and ROBERT MACKLIN, of Wakefield, 115.